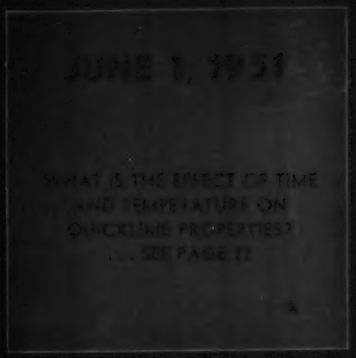
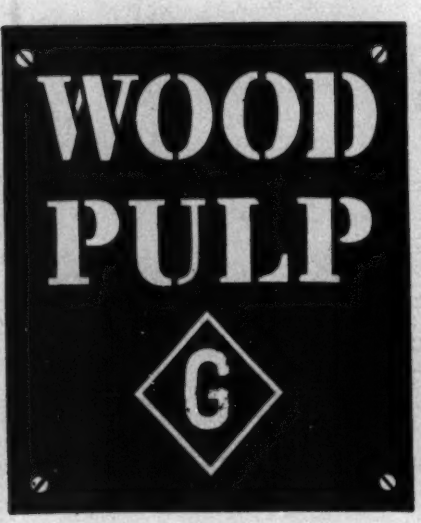
Paper





Established 1886

"Mind is the great lever of all things; human thought is the process by which human ends are ultimately answered."
DANIEL WEBSTER

Thought and planning—products of the mind—have been the power which developed the great Pulp and Paper Industry.

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FACTS in FIGURES

In the six southeastern states served by the Seaboard Air Line Railroad — Virginia, North Carolina, South Carolina, Georgia, Florida, and Alabama — there are 109 million acres of forest land, comprising 60% of the total land area.

For the entire South, wooded lands amount to 39% of the total land area. From this it can be readily seen that these six Seaboard-served states constitute the heart of our future wood cellulose supply.

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Assistant Vice President,
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Norfolk 10, Va.

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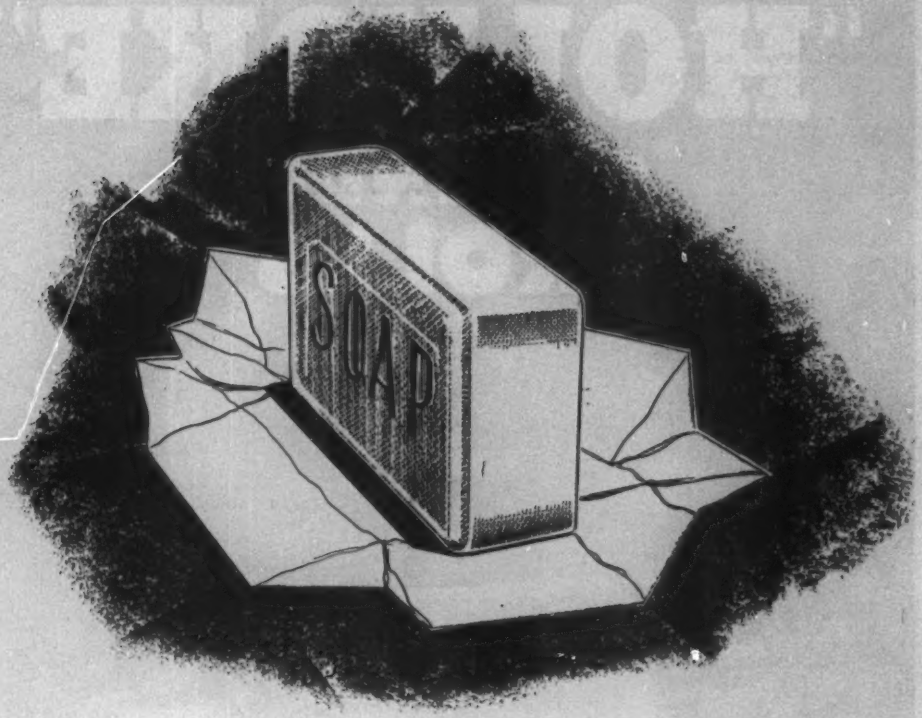
VA. N.C. S.C. GA. ALA. FLA.

THROUGH THE HEART OF THE SOUTH



Something You can sell

If you have a customer or prospect who has trouble with mold on soap wrappers, you can sell him a covering that *won't mold*. How? Simply by offering a casein-coated wrapper protected by Monsanto Santobrite.

This built-in protection is inexpensive. As little as 2.0% of properly applied Santobrite (sodium pentachlorophenate, technical), based on the dry weight of casein, *protects* against surface microbiological growth . . . in any climate. Santobrite also should be added to the paste employed to seal wrappers, because mold organisms also flourish in adhesives.

Why not offer your customers soap wrappers protected against mold? For information on the use of Santobrite for this purpose, contact the nearest Monsanto Sales Office or write MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 S. Second Street, St. Louis 4, Missouri.

DISTRICT SALES OFFICES: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Houston, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle. In Canada, Monsanto (Canada) Ltd., Montreal.

Santobrite: Reg. U. S. Pat. Off.

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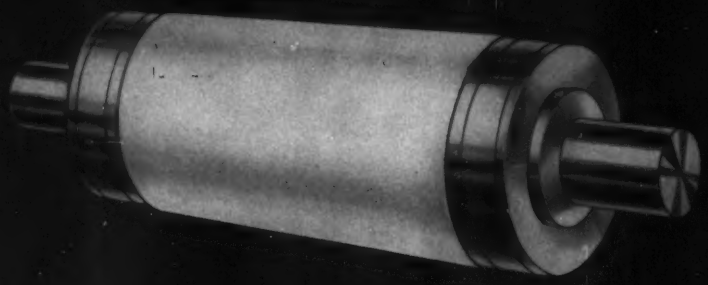
CHEMICALS — PLASTICS

SERVING INDUSTRY . . . WHICH SERVES MANKIND

"HOLYOKE"
CALENDER ROLLS



HOLYOKE MACHINE COMPANY

CALENDER ROLLS for the PAPER and TEXTILE INDUSTRIES
WATER FILTRATION EQUIPMENT
HOLYOKE, MASSACHUSETTS

Paper TRADE JOURNAL

VOL. 132 JUNE 1, 1951 No. 22

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NEXT WEEK

For an informative description of a new type of high capacity water well, read "Four Million GPM From Single Caisson Well" by Nial Sherwood, Consulting Engineer, Liberty, N. Y.

An interesting description of a method for making useful products from types of wood waste that are now usually discarded, will be found in "Manufacture of Consolidated Products From Wood Residues" by M. D. Macdonald, Wood Technologist, Oregon Forest Products Laboratory, Corvalis, Oregon.

REMEMBER THESE DATES

JUNE 3-6: National Paper Box Mfrs. Assn., Haddon-Hall, Atlantic City, N. J.

JUNE 8-9: New England Section of TAPPI, Spring Meeting, Griswold Hotel and Country Club, Groton, Conn.

JUNE 18-22: American Society for Testing Materials, Annual Meeting, Chalfonte-Haddon Hall, Atlantic City, N. J.

JUNE 22-23: Maine-New Hampshire Section of TAPPI, meeting to be held at the Eastern Slope Inn at North Conway, N. H.

JUNE 24-28: American Pulp & Paper Mill Supts. Ass'n. National Convention, to be held at the Multnomah Hotel, Portland, Oregon.

JUNE 27-30: Empire State TAPPI, meeting at the White Face Inn, Lake Placid, N. Y.

SEPT. 16-19: American Institute of Chemical Engineers, Regional Meeting, French Lick, Ind.

OCT. 10-12: American Pulp & Paper Mill Superintendents Assn., Southern and Southeastern Div's., George Washington Hotel, Jacksonville, Fla.

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Payable in advance—Single Copy 15c—U. S. $6.00 per year—U. S. Possessions $7.00 per year.

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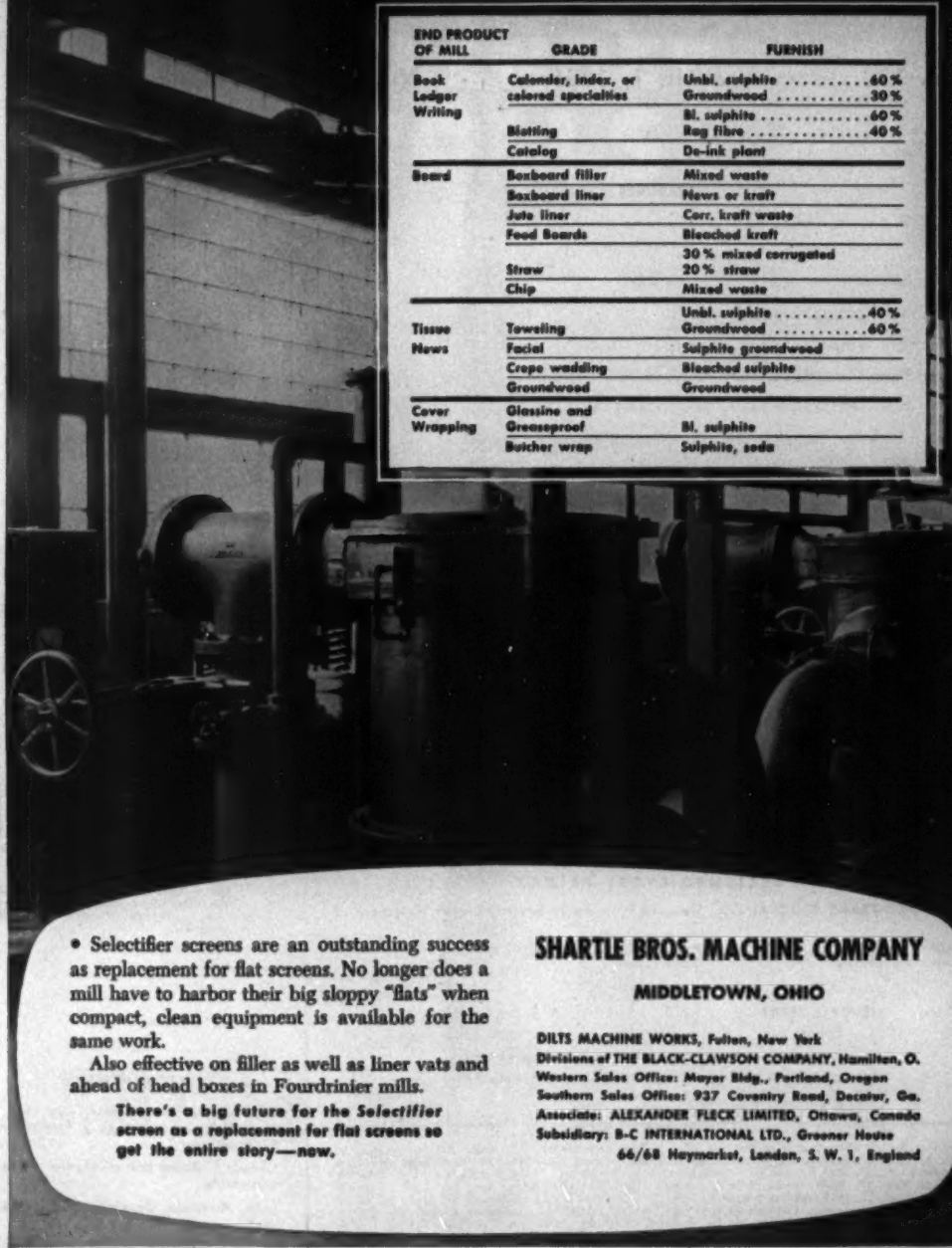
All Other Countries $20.00 per year.

Selectifier screens replacing flats



END PRODUCT OF MILL	GRADE	FURNISH
Book Ledger Writing	Calender, Index, or colored specialties	Unbl. sulphite .....60% Groundwood 30%
	Blotting	Bl. sulphite .....60% Rag fibre 40%
	Catalog	De-ink plant
Board	Boxboard filler	Mixed waste
	Boxboard liner	News or kraft
	Jute liner	Corr. kraft waste
	Food Boards	Bleached kraft
	Straw	30% mixed corrugated 20% straw
	Chip	Mixed waste
Tissue News	Toweling	Unbl. sulphite .....40% Groundwood 60%
	Facial	Sulphite groundwood
	Crepe wadding	Bleached sulphite
	Groundwood	Groundwood
Cover Wrapping	Glassine and Greaseproof	Bl. sulphite
	Butcher wrap	Sulphite, soda

• Selectifier screens are an outstanding success as replacement for flat screens. No longer does a mill have to harbor their big sloppy "flats" when compact, clean equipment is available for the same work.

Also effective on filler as well as liner vats and ahead of head boxes in Fourdrinier mills.

There's a big future for the *Selectifier* screen as a replacement for flat screens so get the entire story—now.

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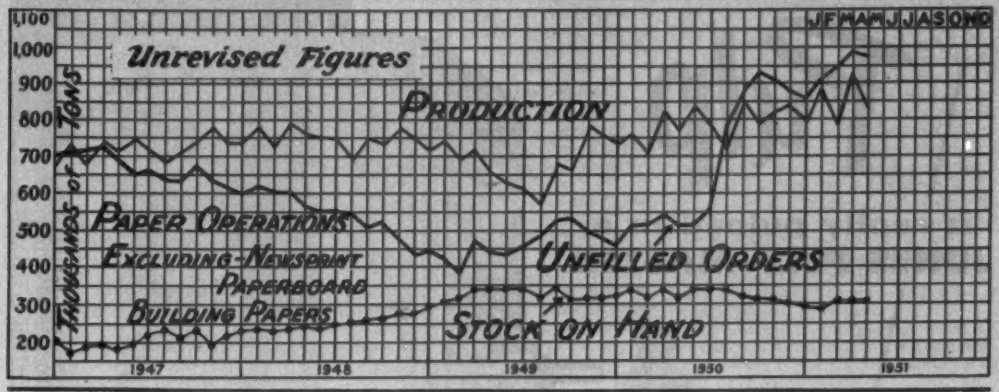


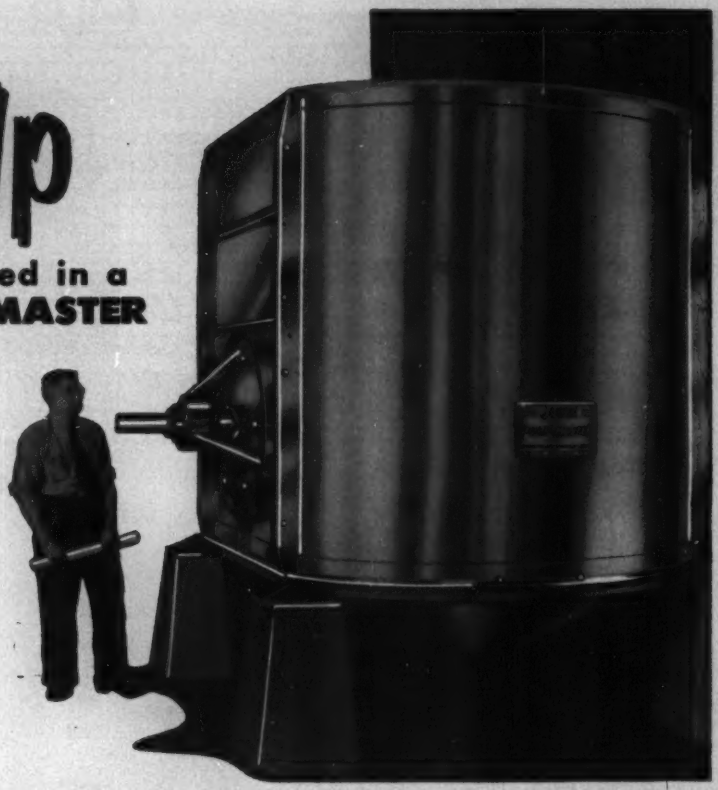
Weekly Brief of Important Figures

Source	Production	WEEK ENDING May 19, '51	Apr. 21, '51	May 20, '50
APPA	Paper Production Percent Capacity[a]	103.1	103.1	97.3
	Unbl. Kraft Paper Production Percent	100.7	90.2	97.1
NPA	Paperboard Operating Ratio Percent Inch Hours	106	102	92
		Apr. 1951	**Mar. 1951x**	**Apr. 1950**
APPA	Paper Production[e] (Except Newsprint and Building Papers) ....Tons	831,500	911,754	774,000
	New Orders ....Tons	857,000	959,757	779,500
	Unfilled Orders ....Tons	964,636	932,996	543,100
	Shipments ....Tons	824,000	911,448	768,000
		Apr. 1951	**Mar. 1951**	**Apr. 1950**
NPA	Paperboard Production ....Tons	1,006,972	984,405	858,300
	New Orders ....Tons	956,085	946,819	847,100
	Unfilled Orders ....Tons	646,878	704,936	343,700
	Our Customers Activities Index[1]	**Latest Mo.[c]**	**Previous Mo.[c]**	**Year Ago[c]**
FRS	Manufactures Total Index	230	228	191
	Durable Mfg. Index	274	268	210
	Nondurable Mfg. Index	194	195	177
	Chemical Products Index	294	291	250
	Mfg. Food Products Index	149	148	148
	Printing and Publishing Index	178	175	172
ODC	Magazine Advg.-Printer's Ink Index	343	344	328
	Retail Sales Combined Adjusted Index	342.9	356.6	308.1
	Drug Index	240.3	244.1	221.3
	General Merchandise Group Index	318.4	347.3	291.8
	Grocery and Combination Index	432.7	427.6	377.3
	Prices Index			
BLS	Consumers Price Index[1]	184.5	183.8	168.4
	Wholesale all Commodities[2]	184.0	183.6	152.7
	Wholesale Foods[2]	186.6	187.6	155.5
	Commodities other than Farm Products and Foods[2]	172.4	171.8	146.1
	Wholesale Pulp and Paper[2]	196.3	196.5	155.5
	Purchasing Power of Dollar, Consumers Prices[1]	54.2	54.4	59.4
	General Activity Index			
FRS	Mfg. Production-Worker Payroll	429.4	423.7	333.5
	Unemployment Compensation Initial Claims (M)	729	770	1,294
	Miscellaneous Carloadings–Thousands of Cars	1,373	1,498	1,688
	Electric Output (Million KW hr.)	36,172	33,102	31,864
PTJ	Average 32 P & P Common Stocks as of May 22	$37.74	$38.67	$34.56
	Average Indicated Dividends Common Stocks as of May 22	2.54	2.53	2.29

[1] 1935-39=100 Unadjusted Index
[2] 1926=100
[3] New 6-7 day basis.
[e] For details see APPA Monthly Statistical Summary—April 1951 Estimated Figures.
[c] Latest Month Available on Request
x Revised figures.

Pulp

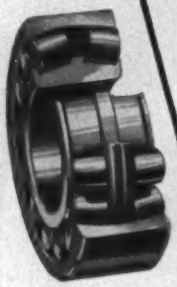
is really pulped in a JONES PULP-MASTER



The Jones Pulp-Master* is one of those machines that does an outstanding job because it's built for just that purpose. It completely disintegrates new pulp, wastepaper or wet strength papers in record time. It can be used for atmospheric cooking of straw and similar materials, has a refining area to break up fibre bundles and to clear stock. Power consumption is low, maintenance is held to the minimum. SKF Spherical Roller Bearings are used to smooth the path of power. They were selected because they are more than adequate for extremes of shock loading, because long experience has proved the complete dependability of SKF Bearings in heavy duty work. Paper mill machinery builders prefer SKF because SKF can always help put the right bearing in the right place.

7242

*For details, write E. D. Jones & Sons Company, Pittsfield Massachusetts.



8 REASONS WHY SKF IS PREFERRED BY ALL INDUSTRY

integrity
craftsmanship
metallurgy
tolerance control
surface finish
product uniformity
engineering service
field service

SKF
BALL AND ROLLER BEARINGS

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—*manufacturers of* SKF *and* HESS-BRIGHT *bearings.*

Paper TRADE JOURNAL

TRENDS

Office of the Paper Trade Journal,
Thursday, May 31, 1951.

Despite the formidable opposition to wage and price controls which is stemming from such groups as the National Association of Manufacturers (NAM), the Chamber of Commerce of the U.S., etc., Price Administrator Di Salle believes an overwhelming majority of businessmen favor continuation of price controls.

Speaker at a garment association luncheon this week, Mr. Di Salle said he felt confident Congress will approve an extension of OPS after June 30 as the surest means of controlling inflation.

Naming opposition to price controls as coming from NAM, meat packers, the cotton bloc, and cotton textile merchants, the Price Administrator said he did not feel it will upset *the present system.*

"The Present System"

Undoubtedly, Mr. Di Salle's use of the word *system* covered the program of the Economic Stabilization Agency for wage and price controls. It is hard to find any *arrangement* or *system* in the present disorder of price regulations, as they pertain particularly to the pulp and paper industries.

To press time, about the only price regulations which are still effective are the General Ceiling Price Regulation (GCPR) of January 26—which froze prices to the level of January 25—and CPR 28, New Cotton Cuttings Ceiling.

Protests against the May 28 dateline for filing price reports for CPR 22, the Manufacturers Pricing Regulation; and requests for exemption therefrom have come from one after another branch of the industry. Included in the group which have asked for tailored ceilings and deferments are: the kraft paper industry, sulfite papers, fibre box, folding paper box, set-up paper box, fibre drum, fibre can and tube, special paperboard, domestic woodpulp producers and consumers, gumming industry, etc.

Pending release of a tailored ceiling price for domestic wood pulps, producers thereof are covered only by the General Ceiling Pricing Regulation. They have been exempt from CPR 22. In the interim, market pulp consumers find their price accounting scrapped, for until a tailored ceiling price is set for domestic pulps, the consuming mills are unable to determine the price of their basic material.

Filing of the manufacturer's pricing reports has been deferred until July 2. The matter of further deferments (90 days were asked by some groups) until tailored price orders are ready, is yet to be decided.

Meanwhile, paper buying and selling is for the most part undisturbed by the harangue and bewilderment. Most orders are still being accepted "Price prevailing on date of shipment."

Newsprint Featured Again

Newsprint is the one segment of the industry that is never neglected by either the daily press—or Congress. Space can well said to be devoted to the subject.

Highlighted now is the unanimous final report of House Judiciary subcommittee, headed by Emanuel Cellers of New York.

Based on a year's study of the newsprint industry, the report urges anti-trust action against monopolies; steps to encourage production and to alleviate shortages that threaten the world's free press; and makes recommendations to the Federal Trade Commission and the Office of Price Stabilization.

Emphasis in the industry, the report said, is on stable prices, stable profits, and stable levels of production . . . and among the devices used to attain such stability are long-term contracts, end-use restrictions, resale price maintenance, international cartel arrangements.

Urged on the FTC is a study of statistical interchange between the Newsprint Service Bureau, the Newsprint Association of Canada, and Scannews (Scandinavian newsprint cartel): to determine if the arrangements among these associations have in the past restrained competition or tended to create monopoly power.

The OPS was urged to "encourage members of the newsprint industry to make a fresh and individual start in determining their independent pricing policies after government controls become no longer necessary."

To encourage production, the report suggested that RFC (Reconstruction Finance Corporation) "hold open its lending facilities" for projects which promise to increase newsprint supplies . . . that new newsprint mills "have the benefit of accelerated depreciation for tax purposes . . . to place them on a financially competitive basis with old mills."

Also recommended by the report were substitute processes for newsprint production, encouragement of new enterprises which would employ hardwoods, bagasse, wheat straw and deinked newsprint; also that the potentialities of Alaskan forest for newsprint development be utilized.

Three-Year British Agreement

With the conclusion of discussions between Canadian newsprint mills and Lord Layton, representative of the Newsprint Supply Company of the United Kingdom, announcement was made of an agreement to supply Great Britain for the next three years, within the framework of long-term contracts which extend to 1958. Quantities involved were not stated.

Informed Ottawa sources estimated that the UK will probably get four or five times more newsprint than it did in 1950 when the tonnage was about 20,000 tons.

7-Day Operation for 12 Mills

In a move to help overcome world newsprint shortages, 12 Canadian newsprint mills announced plans to keep their plants rolling seven days a week. The mills are located in Ontario, Manitoba and Quebec, and agreement with nine AFL unions for the Sunday work is said to have been hewed on a 40-hour week. Negotiations with the unions proposed one-shift operation for 12 Sundays during the next year.

Quebec mills have a working agreement which does not provide for Sunday operations, however, and none is contemplated, it is said.

Opposition to the plan is based on insufficient wood supplies and the need of Sundays for repair and maintenance for efficient operation.

Canadian Editor Comments†

Commenting in general on U. S. publicity also on discussions of the industry held at the meeting of the International Federation of Newspaper Publishers in London last week, a Canadian editor wrote:

"Costs in the newsprint industry, as in every other line of production, are rising, and if the publishers in the U. S. and elsewhere are looking to sources of newsprint other than from woodpulp, it behooves Canadian mills to build up reserves against the day when their product will be competing with other and presumably cheaper forms of paper. . . .

"Considering the supply-demand situation in the newsprint field during recent years, Canadian mills might well be charging half as much again for their output as they are doing; and newsprint users would have no option other than to pay the price. Producers in this country, however, have taken a long-range view of the situation and, recognizing the advantage of having the goodwill of their customers, have kept the selling price within a reasonable range in relation to costs. Obviously, in the light of recent developments, their policy has not been very greatly appreciated by their larger customers across the line."

E.C.E. Urges European Revaluation

Revaluation of European currencies as a means of lowering prices of European imports, combatting excessive speculation and otherwise stemming the tide of inflation, has been urged by the United Nations Economic Commission for Europe. Strong support for upward valuation is said to already exist, particularly among Swedish and British economists. —E. P. N.

† Financial Times, Montreal.

Paperboard Production (Tons)*

	May 19 1951	May 13 1951	May 20 1950
Production	257,930	252,035	209,234
New Orders	206,161	203,058	193,546
Unfilled Orders	680,103	732,449	358,627

* Source: NPA.

The American Pulp and Paper Mill Superintendents Association

32nd Annual Convention — **June 24-28, 1951**

Hotel Multnomah — **Portland, Oregon**

June 24—Registration and Affiliates Dinner

June 25—Woods Trip

Busses to leave Multnomah Hotel about 7:30 A.M. Destination a few miles from Oregon Coast.

Cat-logging, high-line logging, falling, bucking and tree-topping operations to be witnessed.

Lunch served by Crown Zellerbach Corporation.

Afternoon trip through stands of western hemlock and Sitka spruce—also through area of famous Tillamook Burn (a forest area of 300,000 acres that was burned over during 1933).

Operations demonstration of three thinning, reforestation, fire protection and prevention, and fire organization.

Arrive at Hotel Multnomah between 5 and 6 P.M.

June 26—Mill Visits (Three Trips)

1. Crown Zellerbach Corporation, Camas, Washington

2. Weyerhaeuser Timber Co., Pulp Division and Longview Fibre Co., both Longview, Washington

3. Publisher's Paper Co., Oregon City, and Crown Zellerbach Corporation, West Linn, Oregon

Dedication of historical marker at site of first paper mill in Oregon

June 27-28—Two General Conferences Six Group Meetings

30 Papers on Operation, Maintenance,
Technology, Forestry, Management

Practical — Informative — Authoritative

Unusual Ladies' Program

Educational — Social — Entertaining

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Crown Zellerbach Corporation
West Linn, Oregon

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111 West Washington Street
Chicago 2, Illinois

Chairman
GUS OSTENSON
Crown Zellerbach Corporation
Camas, Washington

News of the Week

Paper TRADE JOURNAL

D. M. BARE DAMAGED

Early Friday morning, May 25, an explosion in the digester building at Roaring Springs, Pa., wrecked the Soda Pulp Mill. The cause of the blast and its full extent has not been determined.

As a result the paper mill also has been damaged.

The management is actively pushing its survey of damage and necessary replacements. Production will be resumed as quickly as possible.

NORFOLK MILL SOLD

NORFOLK, N. Y. — The St. Lawrence Paper Corp. mill at Norfolk has been sold to the Knight Newspapers, Inc., which operates newspapers in Chicago, Ill.; Detroit, Mich.; Miami, Fla.; and Akron, O., according to John S. Knight, editor and publisher of the Chicago *Daily News*.

Indirectly all Knight newspapers are involved in the transaction, there being no outside interests.

The price paid for the Norfolk mill, which has been operated by a group headed by Harry Pearlman since last July, is said to approximate $2,500,000. Pearlman is president of the National Paper Corp. of Pennsylvania.

Officers of the new corporation will be: James L. Knight, Miami *Herald*, president; E. P. Barnes, Chicago *Daily News*, vice-president; K. L. Milburn, Akron *Beacon Journal*, vice-president; Henry C. Weidler, Detroit *Free Press*, vice-president; and C. Blake McDowell, Akron, secretary.

The Norfolk mill was sold last summer by the St. Regis Paper Co. to the Pearlman interests. The mill is equipped with two Fourdrinier paper machines, one 150 inches wide and another 91 inches; a groundwood pulp mill equipped with 12 pocket grinders; a sulphite plant containing three digesters and facilities for bleaching the entire production of pulp. The mill turns out 150 tons of newsprint daily.

IN CHINESE SOON

The University of Maine Lectures, which appeared in the November 30, 1950, issue of *Paper Trade Journal*, will soon be translated into Chinese. Ching-Yuin Hsu, a former student at Maine, now employed by the Taiwan Paper Co., on Formosa, has been given permission to do this work.

CERTIFICATES APPROVED

WASHINGTON, D. C. — Accelerated tax amortization certificates were approved this week for plant expansions as follows:

No Accidents In Twenty-Five Years

For this record the Nepco lake power crew has been awarded a special plaque by Nekoosa-Edwards Paper Co., Port Edwards, Wis. Foreman George Johnston, who has been connected with the hydro station during the entire period, is shown receiving the plaque from John E. Alexander, company president and general manager. Pictured are, left to right, Harold Roberts, Mr. Alexander, William Goggins, Mr. Johnston, Phillip Millonbah, engineer E. P. Gleason, and Edward Kiesling.

Camp Manufacturing Co., Inc., Franklin, Va., pulp-kraft paper, $6,282,314 applied for, 80 percent certified;

St. Mary's Kraft Corp., St. Mary's, Ga., sulphate pulp and kraft paper, $1,842,464 applied for, 65 percent certified;

Olin Industries, Inc., New York, cellulose, $17,439,000 applied for, 65 percent certified;

Rayonier, Inc., Fernandina, Fla., cellulose, $2,985,535 applied for, 65 percent certified.

BRITISH COLUMBIA'S INDUSTRY

British Columbia's pulp and paper industry represents an investment of $210 million in plant and equipment. Its production for the year 1950 was $86,800,000, of which shipments to the United States reached a valuation of $60,500,000. The 12 pulp and paper mills in British Columbia employ 5,567 persons in their mills and approximately 1,515 in their logging operations. The annual payroll for mill employes is $18,300,000. The total value of products of the British Columbia mills sold in off-shore markets in 1950 amounted to $6,400,000.

Production in the industry during 1950 in B. C. constituted 115,000 tons of sulphate pulp, bleached and unbleached 50,000 tons of sulphite pulp, 403,000 tons of newsprint, 30,000 tons of building paper, boards and felts, and 74,000 tons of wrappings and paper specialties. Dissolving pulp for conversion into rayon yarns and plastics represented a total of 115,000 tons. Total production in B. C. during 1950 was 787,000 tons, and it is estimated that the figure for 1951 will increase to one million tons.

According to Leander Manley, secretary of the Western Branch of the Canadian Pulp and Paper Assn., the industry in British Columbia consumes approximately 600 million F.B.M. of wood or approximately 14 percent of the total log cut of the B. C. Coast areas.

CHAMPION IMPROVEMENTS

Champion Paper and Fibre Co. has broken ground for a new building addition at the plant site along Rhea Avenue in order to rearrange production facilities at its Hamilton, Ohio, division. The new construction takes in the area formerly occupied and known as the Coating Mill North Parking lot.

NEW USE FOR SPENT LIQUOR

APPLETON, Wis. — Wisconsin householders may be burning sulphite liquor in furnaces and stoves along with coal next winter, and thus help to reduce stream pollution, if tests now in progress keep showing good results. Scientists and engineers of both the coal and paper industries are working together on experiments to use spent sulphite liquor in coal briquettes.

On its way from mines by rail and lake boat to Wisconsin fuel docks, considerable quantities of coal become powder that would smother a house-heating fire if shoveled into the firebox. So the coal docks press this powder into clean, convenient briquettes and sell it for home fuel, mixing it with asphalt to make the tiny particles stick together.

New ideas were first explored by the University of Wyoming's Natural Resources Research Institute working under a grant from the Hoberg Paper Mills of Green Bay.

Now three big industrial outfits are working together on a project to make better briquettes by using spent sulphite liquor in place of some of the asphalt. Pooling their experience and know-how in the program are practical briquetting experts of The C. Reiss Coal Company, Sheboygan, which operates fuel docks at principal ports on the Upper Lakes; engineers of Komarek-Greaves & Company, Chicago, long-established manufacturers of briquetting machinery; and, scientists of the Sulphite Pulp Manufacturers' Research League, Inc., Appleton.

FIGHTING PAPER WANTED

Invitation to bid has been issued by the New York Quartermaster Procurement Agency, 111 East 16th Street, New York 3, N. Y., on QM-30-280-51-1297, covering Fiberboard Corrugated, 8,500 sheets and 1,600 rolls; and Paper, Waxed, Shredded, 160,000 lbs.; and Barrier Material, Greaseproof, 29,250 rolls; and Bag, Interior Packaging, 2,305,000 each. Bids will be opened May 31, 1951, at 4:00 p.m. (EDST) at the New York office. This procurement is for the U. S. Army.

SUNDAY NEWSPRINT OPERATION

OTTAWA—Canadian newsprint workers have consented to Sunday operation of newsprint mills to aid in producing more newsprint so that world shortage may be relieved as much as possible. The unions giving this consent now represent approximately 18,000 workers in 11 of the largest newsprint mills in Quebec, Ontario and Manitoba. This consent is the basis for the renewal of an agreement which provides that manufacturers will put into effect a 40-hour week, with a 48-hours' pay condition, just as soon as manpower and housing facilities will allow.

However, the hourly-rated newsprint workers will get an increase of 14 percent, with a minimum of 16 cents an hour, until the 40-hour week goes into effect. If conditions warrant, any manufacturer can give 30-days' notice to a union and use the right to institute a 44-hour week when wage rates will be increased 17½ percent over the rates in effect April 30, 1951. The minimum increase will be 19 cents an hour. An increase of two cents an hour is to be provided for mechanical tradesmen and helpers, steam plant engineers, firemen and other jobs requiring certificates.

SCRUB OAK FOR PAPER

ATLANTA, Ga. — The State of Georgia has been asked to join Florida in a project for making paper pulp from scrub oak. Representatives Fred Bentley of Cobb County and Chapell Matthews of Athens, members of a special legislative committee sent to the University of Florida to investigate research work being done there on scrub oak, will recommend to the Georgia Legislature that they vote that Georgia to join Florida in turning millions of acres of scrub oak into a cash crop.

It was stated that the University of Florida has agreed to turn over its formulas for a new low-cost papermaking process to the Herty Laboratories at Savannah, Ga., without cost if Georgia agrees to help. At the present time the Pulp and Paper Laboratory of the University of Florida is working with a small cooker that produces only two quarts of pulp material at a time. The Herby Laboratories have larger facilities for pilot plant work.

Work that has so far been done at the University of Florida convinces the experimenters there that scrub oak can be used as a raw material for high quality paper as well as material for cardboard and crates and could possibly be mixed with plastic for door facings, wallboard and hard floorings.

PURCHASE 81,000 ACRES

The International Paper Company has recently completed a transaction involving one of the largest tracts of land in the South.

Eighty-one thousand acres of lands owned by the Ran Batson estate in eight Mississippi counties were purchased by the company. Lands sold are located in Pearl River, Marion, Lamar, Forrest, Stone, George, Harrison and Jackson counties.

GETS $1,200 SCHOLARSHIP

MARSHFIELD, Wis.—Wendelin Frenzel, 17-year-old Marshfield high school senior, was named winner of the $1,200 Trees for Tomorrow forestry scholarship.

Wendelin maintained his own experimental forest plot, operated a transplant bed, planted trees, and worked with his father on a selective cutting program on the Frenzel woodlot.

PEOPLE

WALTER W. HOLLAND has been appointed to the newly created post of manager of production at the Rumford mill of Oxford Paper Co. Mr. Holland, general superintendent of the Quebec North Shore Paper Co., Baie Comeau, Que., has been associated for many years with the paper industry in Canada. He has long been active in the Technical Section of the Canadian Pulp and Paper Assn., and is at the moment, chairman of the executive council of this Section.

FRANCIS J. CURTIS was named Assistant Administrator to head NPA's Chemical, Rubber and Forest Products Bureau.

He is on leave as vice-president and director of the Monsanto Chemical Co. of St. Louis, Mo.

As Director of the NPA Chemical, Rubber and Forest Products Bureau, Mr. Curtis will integrate the related programs of the divisions comprising the Bureau and coordinate his bureau's operation with others in the overall NPA defense and essential civilian production pattern.

The Chemical, Rubber and Forest Products Bureau includes these divisions: Chemical; Lumber and Lumber Products; Pulp, Paper and Paper Board; Printing and Publishing; Containers and Packaging; and Rubber.

WILLIAM J. JOSKO, salesman in the New England area of the James Flett Organizations, Inc., scrap marketing agency, has been advanced to sales manager with headquarters in Chicago. JAMES L. JOHNSON has been made Washington representative of the organization. He will also act as representative of the National Association of Waste Material Producers in the nation's capital.

G. GORDON HERTSLET has been named to head the Gaylord Container Corp. of St. Louis' newly formed Customer Public Relations and Advertising Departments, effective June 1, 1951.

Mr. Hertslet was formerly account executive with Oakleigh R. French and Associates and is a past-president of the St. Louis Advertising Club.

W. BARCLAY has been promoted to Chairman of the Board from the position of vice-president of Powell River Sales Co., Ltd. M. J. FOLEY has been appointed president. R. W. FOOTE has been promoted to vice-president from the position of manager.

R. G. McHUGH has been appointed manager. R. C. MacKENZIE, formerly assistant secretary has been promoted to treasurer and assistant secretary.

H. C. MacDOWELL has joined Brown-Bridge Mills, Inc., Troy, Ohio, manufacturers of gummed tapes and gummed papers, as sales representative in the Southwestern States.

R. E. Bundy

E. J. Farina

Fibreboard Adds Two Directors

EDMUND J. FARINA, vice-president in charge of sales, and ROBERT E. BUNDY, vice-president in charge of production, were elected to fill two newly created directorships at Fibreboard Products, Inc.

NORMAN J. JOHNSON, assistant treasurer of Griffith Rubber Mills, Portland, Ore., has been appointed to the nation's Rubber Industry Advisory Committee. Mr. Johnson will serve on the 21-man advisory group to act as liaison between the Small Business Committee and the NPA.

Ramie Fiber Developments

C. E. Wright

CLEWISTON, Fla.—Some of the ramie fiber, now being produced at the plant of Newport Industries, Inc., here and at Canal Point, Fla., is being shipped abroad for the manufacture of bank notes and cigarette paper.

Although better known as a textile raw material than for paper making, ramie fiber, now being successfully produced in the United States for the first time, has much larger possibilities in the paper field than have yet been developed here. A research report on ramie fiber prepared by the Florida Power & Light Co., Miami, Fla., states:

"Its high cellulose content and strong resistant fibers make it suitable for high-grade papers for special purposes such as bank notes or bond papers where strength, rattle, elasticity and opacity are required."

Ramie fiber has been used in the Orient for 4,000 years, but it was not introduced in Europe until 1845 and its first introduction in the United States was in 1855, when the U. S. Department of Agriculture attempted to foster its cultivation here. Various attempts to establish ramie industries in this country have been tried over the years and all of them have failed for various reasons, in some cases because of insufficient financing, but chiefly because the promoters of these projects were unable to find a machine that would do the job of decorticating the plant easily and economically. Newport Industries, Inc., has developed such a machine, which is an adaptation of the equipment used for decorticating sisal and abaca (Manila hemp).

The U. S. Department of Agriculture has been interested in promoting ramie cultivation and processing in this country for many years, but its interest was whetted during World War II when supplies from abroad were shut off, which was an embarrassment to the U. S. Navy in particular, which had been using it for stern-bearing packings which far outlast flax, heretofore used.

About 10 years ago Newport Industries, Inc., began experiments in its laboratory at Pensacola, Fla., where its main plant is situated. With the cooperation of the Everglades Experiment Station of the Department of Agriculture at Belle Glade, Fla., Newport in a joint venture with the U. S. Sugar Corporation, which has at Clewiston, Fla., the largest raw sugar plant in the United States, began to grow ramie plants in the Everglades area, which is ideally suited to the rapid growth of the plant, because of soil, a warm climate and abundant rainfall.

Although the ramie plant has a rapid growth, sometimes as much as two inches a day, it requires years to establish sufficient cultivated acreage to support a processing plant. This is due to the fact that the ramie plant does not grow successfully from seed but from roots, and these roots cannot be used until they are from three to five years old. Hence the primary requirement for a ramie fiber industry is a sufficient acreage of rotating growth so that the plant operation can be carried out economically.

Newport Industries, Inc., now has 2,500 acres of ramie under cultivation in the Everglades section of Florida adjacent to its decorticating plant at Canal Point, and from this is producing at a rate of 2,000,000 lbs. annually of ramie fiber. After being decorticated, the fiber is passed through squeeze rolls, then through drying ovens and is packed in 600 lb. bales to be shipped to the company's degumming plant here at Clewiston, about 45 miles southwest.

With increasing cultivation of the plant, Newport Industries, Inc., will be able by 1953 to double its present output, by which time more may be available for the paper-making industry. Other than that which is being taken by the U. S. Government, the present output is going largely to the Collins & Aikman Corporation of New York for the manufacture of upholstery fabrics for railroad car and automobile cushions. A smaller portion is being taken by the Johns-Manville Co. for fiber packings.

The fact that European countries have been using ramie fiber, chiefly imported from China and Japan, for many years for the manufacture of high-grade paper indicates that a similar trend may develop in the United States when the production of the fiber has reached large enough proportions to supply the probable demand. Its properties as compared with flax for example are: Tensile strength, 100 to 25; elasticity, 100 to 66; torsion, 100 to 80. These are figures that were used in the War Production Board's research report during World War II. While its principal uses for some time probably will be in textile fibers, its paper-making potentialities are not being overlooked by the producer.

FLORIDA MILLS GIVE SEEDLINGS

TALLAHASSEE, Fla.—As an example of the work that Florida pulp and paper companies are doing in reforestation, R. A. Bonninghausen, forest management chief of the Florida Forest Service, has announced that about five million pine seedlings will be given away to landowners in 27 Florida counties. The International Paper Co., Panama City, will donate 4,425,000 of the young trees and the Container Corp. of America, Fernandina, will give away 1,125,000. Distribution of the trees will be by county agents' offices on application of the landowners. Several other mills will also give away trees, but these donations will be handled by the mills themselves.

GOVERNMENT GOSPEL

Woodpulp Off CPR 22

Woodpulp has been removed from control under CPR 22 and now reverts to regulation under GCPR with a cut off date of January 25. This change is pending approval of dollar ceilings by O.P.S. This change does not appear to effect paper or paperboard price calculations under CPR 22.

OPS Meetings

WASHINGTON, D. C.—Industry committees of various segments of the paper and related products field have been active in the past week, before various OPS officials seeking mainly to get from under the Manufacturers' Pricing Regulation, CPR 22, or various of its provisions.

A survey of OPS meetings recently showed the following:

Food Containers—a paper subcommittee considered with OPS representatives, the products to be covered by a special pricing regulation for their industry. The view prevailed that many items could be placed under dollars and cents ceilings, with specific prices established for certain important grades, and with other grades priced in relation.

Some members felt that their experience in computing ceiling prices under CPR 22 was insufficient for them to say specifically whether their industry would be better off with a base period in the forthcoming special regulation, different from the one in the Manufacturers' Regulation. Some would move directly from GCPR to the new regulation, thus avoiding a temporary pricing era under CPR 22.

A subcommittee, decided to study pricing methods for milk bottle stock, liquid tight container stock, round nesting food container stock, milk bottle plug cap stock; ice cream and food pail, paraffined carton, frozen food container and other stocks; solid woodpulp board, solid bleached chemical pulp board, and other food container and closure stocks.

A special Industrial Paper subcommittee recommended pricing formula studies for abrasive paper backing, cable paper, electrical insulation and armature, gasket, stencil backing paper and pressboard. They felt the following might be priced under dollars and cents ceilings and recommended studies to that end; stencil board, tabulating card stock, file folder stock, tag stock, coated tag, wallet and patch other than red patch, red patch, beaming paper, jacquard board, coated tympan and plain tympan, stocks. Also recommended for pricing study were saturating and absorbing papers, industrial filters, artificial leather, latex paper, asphalt paper, etc, in the paperboard group.

Pricing study also was suggested for off-machine and machine coated blanks, uncoated blanks, pasted blanks, coated posterboard, uncoated posterboard, card middles, bogus bristol and tough checkboards; and for pricing by formula of show cardboard, photomount, playing card stock, and others.

The Kraft Paper Manufacturers Industry Advisory Committee reported that pricing under CPR 22 would result in hardship and inequities for their industry; they said it is felt a tailored pricing regulation should be issued, and that the industry be exempted from CPR 22 for 90 days and be continued meanwhile under GCPR, among other modifications.

Initial meetings with OPS representatives were held by groups from the toilet tissue and paper towel manufacturers to discuss pricing problems.

Alkali-Chlorine Industry Meeting

Members of the alkali-chlorine industry advisory committee, also meeting with OPS for the first time, recommended that some of their products be removed from control under the Manufacturers General Ceiling Price Regulation, in favor of the GCPR.

Name Gabriel J. Ticolat

WASHINGTON, D. C.—Gabriel J. Ticolat, paper industry executive, has been named deputy assistant administrator of the Chemical, Rubber and Forest Products Bureau by the NPA.

He will work with Francis J. Curtis, recently appointed assistant administrator of NPA in charge of the Bureau. Mr. Curtis has indicated he intends to devote most of attention to chemicals and rubber production, leaving to Mr. Ticolat work with the pulp, paper, containers, lumber and printing industries.

Sulphur Export

WASHINGTON, D. C.—Sulphur is currently being exported from the United States at the lowest rate since 1946, due to progressive tightening of controls, Loring K. Macy, acting director of the Office of International Trade, informed the House Interstate and Foreign Commerce Committee this week.

Testifying on the sulphur export situation, he said sulphur shortages in the United States and in foreign countries dependent on this country for supplies, continue to be one of the major problems of the OIT.

"We are responsible through exercise of our control authority for protecting U. S. supplies while at the same time we must see that needs of friendly foreign nations are met," said the official.

The committee was to hear further from other witnesses on U. S. sulphur production, and from the sulphur committee of the International Materials Conference, as to foreign requirements.

After relating the history of the control program and procedure for establishing export quotas, the witness told the committee that the United States has been, and even under present conditions continues to be the world's largest supplier and exporter of sulphur. A decline in exports has been in progress since 1949, he said, under voluntary control measures of major producers; however, the cut in first quarter sulphur shipments abroad, which was 26 percent under the 1950 quarterly export rate, proved to be too severe for some foreign countries unable to adapt their requirements to other materials or other sources.

The quota was raised accordingly, and said Mr. Macy, the same general condition has held for the current months, and for the first half of 1951, export quotas have necessarily been set at 240,000 tons per quarter instead of the 200,000 ton rate originally contemplated.

Meantime, the Commerce Department has received further reports on the sulphur outlook, while Mr. Macy was before the committee. These reports included one from American officials at Mexico City, that a test run had been made at the sulphur-recovery plant of Petroleos Mexicanos, at Poza Rica, Mexico, and after minor adjustments, production had started.

This plant has an output of 100 to 110 tons per day of crude sulphur, against estimated capacity of over 140 metric tons, produced from petroleum. When additional gas supplies are brought in from other locations, production is expected to go to 120 to 140 tons daily, but due to local needs, it is uncertain if any exports can be made.

Another report was received from Costa Rica, setting out potential resources, but indicating that no actual exploitation was imminent.

Portugal produces some sulphur, at higher costs than in this country, still further information said, but small amounts of U. S. crude for special uses are being imported.

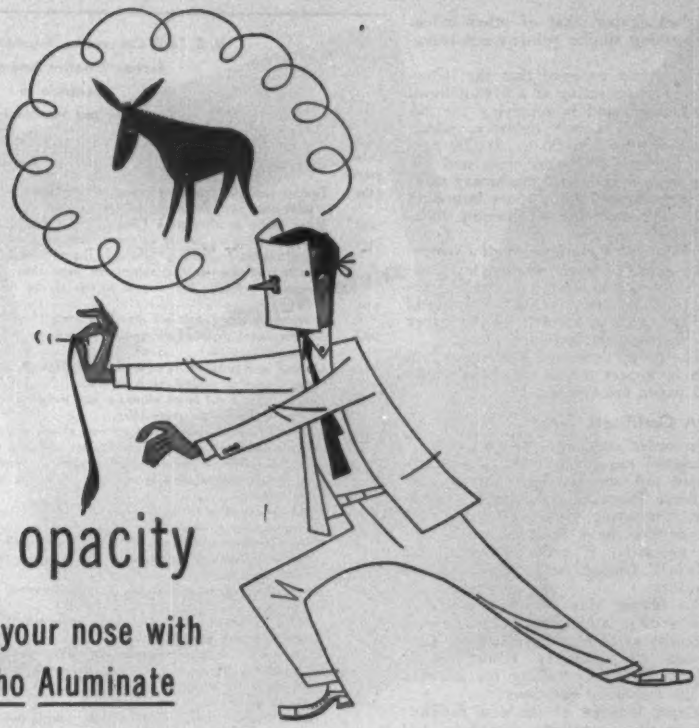
Machinery Mfrs. Ask Aid

The Pulp and Paper Machinery Manufacturers Industry Advisory Committee recommended to the NPA that interim assistance be given their industry until the Controlled Materials Plan goes into effect.

Without such aid, the committee said, essential machinery needs of the papermaking industry cannot be met.

The committee suggested that NPA study the industry's requirements for materials to make machinery and provide manufacturers with a priority rating such as that employed to channel needed metal to the machine tool and farm equipment industries.

NPA said the recommendation will be considered, but pointed out that the essentiality of the industry must be



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weighed against that of other industries asking similar priority consideration.

The group reported that the industry now is operating at a $140-million-a-year level and is supplying the $6-billion-a-year paper industry, which employs from 150,000 to 200,000 persons in some 650 paper mills and 150 pulp mills. They said machinery makers are swamped with orders from pulp and paper mills for replacement units and new equipment.

NPA said a conference of Government pulp and paper experts is scheduled to study civilian papermaking requirements and military products which could be turned out by paper machinery manufacturers.

The group protested a recent reduction in import duties for certain pulp and paper machinery.

DPA Certificate Survey

In order to gauge the progress of industrial expansion under the accelerated tax amortization program, the Defense Production Administration is now conducting a survey of all companies that have received certificates of necessity, it was announced by Edwin T. Gibson, Acting DPA Administrator.

To obtain this information, DPA has written holders of certificates of necessity as of May 7, requesting completion of quarterly report forms (Form DPAF-1) calling for answers to the following questions:

Exact location of the new facility; construction contracts awarded; any revisions of the estimated costs of each project; value in place at the end of the calendar quarter; added capacity for specified products which will be available upon completion of the project; existing capacity that has been or will have to be shut down or dismantled as a result of disruption during the individual expansion program; existing capacity for each specified product that will remain in operation during the expansion.

Procurement Authorizations

WASHINGTON, D. C.—ECA procurement authorizations just announced include paper and related products for Austria, $70,000; Germany, $2 million.

Torquay Tariff Concessions

U. S. tariff concessions negotiated at the recent Torquay 34-nation conference held under the General Agreement on Tariffs and Trade (GATT) become effective June 6 by Presidential proclamation.

On paper and manufactures and publications, the United States concluded negotiations with nine nations: Austria, the Benelux group (Belgium, the Netherlands and Luxembourg); Canada, France, Germany, Norway and Sweden.

In most instances, the new rates (see Schedule 14) for these countries are further slashes from the 1930 tariff rates. Several were on paper items not hitherto effected by the trade agreements which began in 1934.

U. S. Tariff Concessions Negotiated At Torquay, Become Effective June 6, 1951

Schedule 14

Paper and Manufactures

Tariff Paragraph	Commodity Description	Rate of Duty: Jan. 1, 1951	Rate of Duty: Under Torquay Pact
1402	Leather board, or compress leather, counter board, and solid fiber shoeboard, not processed (Can.)	10%	7½%
1403	Filter masse or filter stock (Ger.)	20%	15%
1404	Tissue and papers similar to tissue, stereotype, copying, condenser, carbon, bibulous, pottery, waxing, india and bible papers, valued not more than 15c pound: Weighing not over 6 pounds to the ream (Nor.)	3c lb.+10%	1½c lb.+5%
	Weighing over 6 and less than 10 pounds (Swed.).	2½c lb.+7½%	1¼c lb.+3¾%
1405	Surface-coated paper: Embossed or printed, not lithographically (Can.)	4½c lb.+10%	2½c lb.+10%
	Covered with metal or its solutions, napf, or with gelatin, linseed oil cement, or flock (Ger.)	4½c lb.+10%	2½c lb.+10%
	Covered with metal or its solutions, and weighing less than 15 pounds per ream (Ger.)	4½c lb.+10%	2½c lb.+10%
	Uncoated papers, decorated or covered with a design, fancy effect, pattern or character, not embossed or printed otherwise than lithographically, or wholly or partly covered with metal, etc.: Wrapping paper (Ben.)	4½c lb.+10%	2½c lb.+10%
	Other papers (Ger.)	4½c lb.+10%	2½c lb.+10%
	Gummed papers, napf. (Can.)	5c lb.	2½c lb.
	Printed matter (other than lithographic) composed of surface-coated and other papers dutiable under par. 1405, napf. (Fr.)	4½c lb.+10%	2½c lb.+10%
1405	Boxes of paper, papier mache, or wood, covered or lined: With surfaced-coated, parchment, lithographed, or similar papers (Fr.)	5c lb+5%	2½c lb.+5%
	With cotton or other vegetable fiber (Fr.)	5c lb.+10%	2½c lb.+10%
	Unsensitized photographic paper: Basic (Ger.)	5%	2½%
	Baryta coated (Ger.)	5%	2½%
1406	Lithographic prints: Cigar bands, printed in 8 or more colors, not in metal leaf (Ben.)	35c lb.	25c lb.
	Printed in metal leaf: Labels and flaps, nes. (Can.)	60c lb.	30c lb.
	Labels, flaps, and bands (except cigar bands not exceeding 10 square inches, embossed or die-cut (Ben.)	65c lb.	32½c lb.
	Fashion magazines or periodicals printed in whole or in part by lithographic process or decorated by hand (Austria)	8c lb.	4c lb.
	Decalcomanias, in ceramic colors, weighing per 1,000 sheets of 20x30 inches: Not over 100 pounds (Ger.)	$1.25 lb.+15%	75c lb.+10%
	Over 100 pounds (Ger.)	30c lb.+15%	18c lb.+10%
1407(a)	Drawing paper, and paper similar to drawing paper, weighing 8 pounds or more per ream, and valued less than 40c per pound: Ruled, bordered, embossed, printed, lined or decorated (except by lithographic process) (Ger).	3c lb.+25%	1½c lb.+12½%
	Not ruled, bordered, embossed, etc. (Ger).	3c lb.+15%	1½c lb.+7½%
1407(b)	Sheets of writing, letter, and note paper, with border gummed or perforated, with or without inserts, prepared for use as combination sheet and envelope (Fr).	40%	20%
1409	Hanging paper not printed, lithographed, dyed, or colored (Can).	7½%	5%
1410	Printed matter not of bona fide foreign authorship (except books, including prayer books, pamphlets, music and tourist literature (Can).	15%	10%
1410	Post cards (except American views) plain, decorated, embossed, or printed, except by lithographic process (Fr).	25%	15%
1413	Pulpboard in rolls for wallboard, surface stained, lined, or plate finished (Can).	10%	7½%
	Stereotype-matrix mat or board, valued not more than 1/45c per square inch (Ger).	35%	20%
	Ribbon fly catchers or fly ribbons of paper (Ben and Can).	27½%	20%
	Paper tubes for holding yarn and thread: Parallel (Ger).	1c lb.+25%	½c lb.+12½%
	Tapered (Ger).	3c lb.+35%	2c lb.+25%

Abbreviations: Can., Canada; Ger., Germany; Nor., Norway; Swed., Sweden; Ben., Benelux-Belgium, Netherlands, Luxembourg; Fr., France.

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Industry Advisory Committees to Government Agencies

By Israel B. Oseas*

Background of the Problem

The Defense Production Act of 1950 has been on the books for eight months. The trickle of regulations which began last September is now at flood. What we may manufacture, how much, of what materials, our inventories, to whom we must sell and at what price, whom we may employ and what we may pay are all being decided by officials of the federal government.

This is federal regulation of business carried close to its ultimate extension. A generation ago it would have been seriously doubted that such power existed. Today we accept it almost without question.

We are confronted with the paradox that in order to preserve our liberties we must abandon them—not as we did in the past for the duration of a war—but for the indefinite future. The totalitarian state has won the first battle. Free enterprise has ceased to function in large areas of our economy.

But even though the Defense Production Act took from business the power to govern itself, it gave it a voice in the regulatory process. In five sections of the Act reference is made to the power and duty of the government to consult with the representatives of industry and to give consideration to their views.

By these provisions American business is given a right and a correlative responsibility. It has a right to be heard and to argue its case. It has a corresponding duty to make itself heard and to be effective. That duty may be broken down into three parts: to the government—to cooperate fully in carrying out the purposes of the Act in order to promote the national defense; to the American system of free enterprise—to carry out the responsibilities that are properly those of American business; and to its individual components—to see to it that such controls as are necessarily imposed are so imposed as to do the least damage to the businesses of which business men are the trustees.

Advisory Committee

The formal mechanism for contact between business and government provided by the Act is the Advisory Committee. Many advisory committees have already been appointed by the National Production Authority and by the Office of Price Stabilization and more are being added daily.

The importance of these committees to industry can hardly be overstated. These committees are the official, legally recognized voices of American business. It is to be expected that NPA and OPS will look primarily to them for advice and authoritative information. Every effort should therefore be made to enable them to function with the highest efficiency. What has been done in this direction by the agencies primarily concerned? How concerned are they to set up efficient and effective committees?

OPS and NPA have both published rules dealing with advisory committees. A look at the rules is therefore in order.

O.P.S. Rules

The rules of the OPS are in Price Procedural Regulation 2. Their major purpose appears to be to give the OPS a firm grip over every aspect of the committees from birth to death. Thus the OPS decides:

- whether a committee shall be appointed;
- whether it shall be national or regional;
- who shall be members, both initially, and at all times;
- when it shall be dissolved;
- whether subcommittees shall be appointed;
- when it shall meet;
- where it shall meet;
- what shall be on the agenda;
- who (in addition to members) shall be invited to attend;
- whether the committee members may see even a summary report of the meeting (there is no provision for giving them copies of the full and complete minutes which are required to be kept).

It is also provided an official of the agency shall be chairman of all committee and subcommittee meetings.

The members have the right to attend meetings called by the OPS. The rules give them no other rights or powers whatever!

N.P.A. Rules

These are embodied in Release NPA-148 of January 10, 1951.

The scope of these rules is not clear. The first paragraph states that "the purpose of this order is to prescribe the rules applicable to meetings of representatives of the National Production Authority with industry representatives," but the rules themselves seem to go much further. Unlike the OPS rules, they regulate internal procedure of the agency, and set out clearly the duty of NPA to consult with and obtain the views of the advisory committee on proposed orders.

The grip of the Administrator upon these committees is tight. The members are appointed by the Administrator but the power to add or eliminate names is stated less arbitrarily than in the OPS rules. There are provisions for rotation of membership, filling of vacancies and addition of members. Meetings are to be called by the Administrator whose representative is the presiding officer. A meeting may be proposed by the members, but there is no requirement that such a meeting should be held even though all the members should desire one. Meetings must be held in Washington unless the Administrator in special circumstances directs otherwise. Minutes are to be kept but the members have no right to copies. The Administrator may request outsiders to attend but the committee has no right to invite anyone to the meetings. Even members of the committee do not appear to have an absolute right to attend meetings unless invited—an arbitrary feature absent from the OPS rules.

There are special provisions for task groups but they are hedged around with restrictions. Ordinary task group meetings are to be held like meetings of the principal committee. A task group may be appointed to work outside of Washington for not more than a month, but only by the NPA, and under precise instructions issued by it. Anything else requires approval not only of the Administrator but of the Department of Justice.

These brief summaries of the rules show that there are no provisions for setting up independent and effective committees. Indeed, the intent appears to be to relegate advisory committees to the status of appendages to the agencies, without real effectiveness. One asks why?

Two reasons appear—one expressed and the other inferred. The one inferred is that this is an example of one of the great dangers inherent in all government controls—the tendency of government agencies, vested with power, to strive to increase that power at the expense of the rights of the governed. The other, expressed in the

* Member of the New York Bar.

the most accurate sheeter ever built

with new features for greater precision, speed, efficiency and dependability

oversize pinch roll, 9¼" diameter instead of 8⅛", gives 18% more gripping surface to prevent slippage.

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lifetime tapes, 4" wide and much heavier, wear indefinitely, stretch less.

ratchet tape tension adjustment of both top and bottom tapes is fast and positive. No bolts to loosen.

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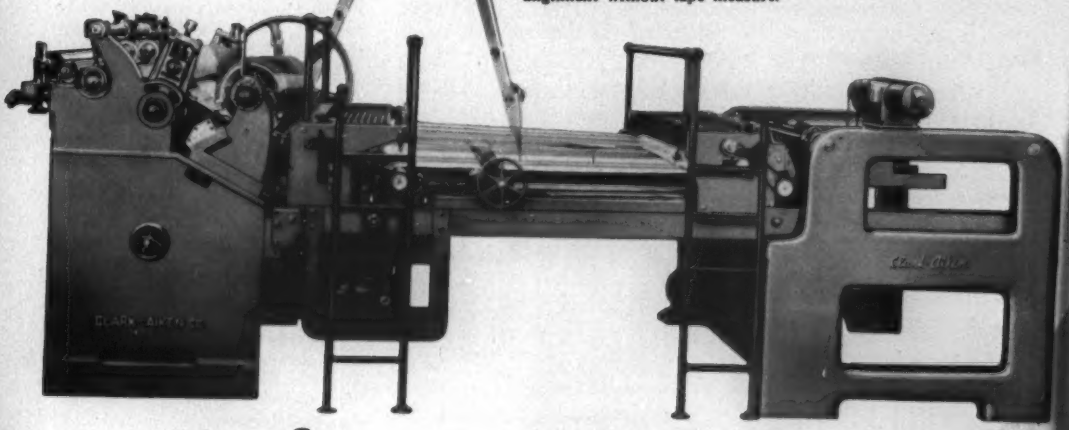

type C Clark-Aiken Super-Speed Precision CUTTER-LAYBOY UNIT

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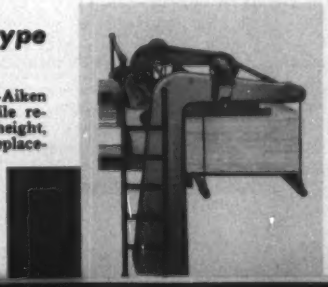
available for all Clark-Aiken Cutters, permits side pile removal, greater pile height, fast skid removal and replacement, fast return.



THE Clark-Aiken COMPANY

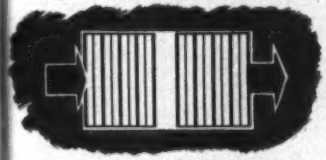
LEE, MASSACHUSETTS

These 10 BIG Features Make Western Precipitation COTTRELLS Outstanding in the Paper Industry

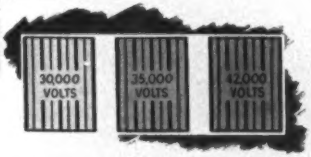
When considering COTTRELL Equipment for salt cake recovery, or any other application in the paper industry, remember this . . . *Western Precipitation Corporation not only pioneered the first commercial application of* COTTRELL *equipment made in any industry, but also pioneered the first application of* COTTRELL *equipment in the paper industry.*

Among the vitally important advantages found in Western Precipitation COTTRELLS, the following are particularly important in paper mill installations ...

1 **Sustained Year-After-Year Efficiency:** The recovery efficiency of Western Precipitation COTTRELLS does not fall off in service. All parts are of ample design to maintain guaranteed over-all efficiency year-after-year —not for just a single acceptance run.



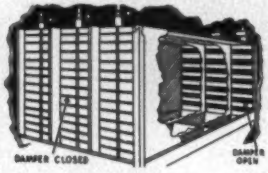
2 **Higher Recovery:** The horizontal flow design of Western Precipitation COTTRELLS eliminates collected material falling countercurrent to incoming gas stream This assures higher recovery, minimum resuspension of recovered material in gas stream.



3 **Maximum Performance:** Horizontal flow of Western Precipitation COTTRELLS permits use of multiple electrical sections so that voltage in each section can be varied to dust loading for maximum recovery without arc-over or electrical breakdowns.

4 **Lower Over-all Cost:** When comparing COTTRELL costs, be sure to compare total *installed* cost, including duct work.

5 **Simpler Maintenance:** Because all interior parts and electrode systems are readily accessible, Western Precipitation COTTRELLS are far easier to maintain and service. Saves "down" time, saves repair costs.



6 **Greater Adaptability:** Horizontal flow design permits use of multi-vane dampers in multiple-unit installations. Thus, one unit can be shut off completely to permit maintenance operations without closing down entire Precipitator. Also, the dampers can be used in slightly-closed position to assure more uniform gas distribution.
On single-unit installations, chain curtains assure uniform distribution of gases. Curtains are easily kept clean by shaker mechanisms provided.

7 **"V"-Shaped Hoppers:** Horizontal design permits use of continuous "V"-shaped hoppers for collecting recovered material. Steeply-sloped walls in this type of hopper prevent build-up or bridging of recovered material.

8 **Space-Saving Compactness:** Not only do their horizontal design permit maximum compactness in Western Precipitation COTTRELLS, but various sections of a unit can be arranged for indoor installation in space above cascade evaporators, thus utilizing space otherwise wasted.

9 **All-Weather Construction:** Western Precipitation COTTRELLS are built for both indoor or outdoor installation, and this organization has had extensive experience with special construction to prevent excessive corrosion in rigorous northern climates.

10 **More Extensive Experience:** Since pioneering the commercial application of COTTRELL Precipitators over 42 years ago, Western Precipitation has consistently led in developing one unique advancement after another. Such features as 4-Point Electrode Suspension that eliminates misalignment of electrodes and reduction in recovery efficiencies . . . Unusually Rugged Rapper Design that assures proper cleaning of electrodes . . Extensive Experience with all types of electrode designs . and many other advantages assure you the ultimate in COTTRELL design and efficiency when you bring your recovery problems to Western Precipitation engineers.

Without obligation our nearest representative will gladly make Western Precipitation COTTRELL *experience available to you for solving your particular recovery problem. Why not contact him today?*

IMPORTANT! In addition to COTTRELL *Electrical* Recovery equipment, Western Precipitation Corporation also designs and installs the well-known MULTICLONE *Mechanical* Collectors for hogged-fuel fired boilers. These units are unusually compact, highly efficient and can be readily fitted into existing plants at minimum installation costs. *Write for details!*

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NPA rules, is the supposed requirements of the antitrust laws. Since only the latter has a justifiable foundation we turn to an examination of it.

Attorney General's Letter

On October 19, 1950, Deputy Attorney General Peyton Ford wrote a letter to the Secretary of Commerce. It is brief enough to be quoted in full:

"My dear Mr. Secretary:

In several instances various Government departments have requested the views of the Department of Justice with respect to whether participation by members of an industry in the activities of industry advisory committees would be considered a violation of the antitrust laws. In view of the recent increase in the number of such requests, it is felt that a statement of the Department's position in this regard might be helpful.

As a general matter we are of the view that the decision as to the necessity for the formation of industry committees to advise a Government department, and the responsibility for their formation, rests with the specific department. However, in organizing such committees, there are certain requirements which should be met in order to minimize the possibility of violation of the antitrust laws. Briefly stated these requirements are:

(1) There must be statutory authority for the employment of such committees or there must be an administrative finding that it is necessary to utilize such committees to perform certain statutory duties.

(2) The agenda for such committees and their meetings must be initiated and formulated by the Government.

(3) The meetings to be held must be at the call of and under the chairmanship of full time government officials.

(4) Full and complete minutes of each meeting must be kept.

(5) The functions of such committees must be purely advisory and any determinations of action to be taken must be made solely by government representatives.

So long as the activities of industry advisory committees are carried on within these limitations, we would not view the activities as constituting an independent violation of the antitrust laws. We wish to emphasize, however, and it should be made clear to participants in such activities, that the Department of Justice retains complete freedom to institute proceedings either civil or criminal, or both, in the event that any particular plan or course of action is used to accomplish unlawful private ends. Further, this Department retains full freedom to institute civil actions to enjoin continuance of any acts or practices found not to be in the public interest and persisted in after notice to desist.

Yours sincerely,
P. Ford
Peyton Ford
Deputy Attorney General"

The Department's letter begins by asking a forthright question, "whether participation by members of an industry in the activities of an industry advisory committee" would be considered a violation of the antitrust laws. It then goes on to say that there are certain "requirements" that *should be met* in order to minimize the possibility of violation of the antitrust laws. Five such "requirements" are set out and in stating them, the suggestive "should" is transmuted into a mandatory "must." The requirements *which should be met* then become limitations on which the Department conditions its view that the activities of committees do not constitute an independent violation of the antitrust laws. Nevertheless the Department expressly reserves its right to prosecute.

The result of such confusing language is a completely misleading document. A layman, or even a lawyer without a specialized background, reading this list of five "requirements," couched in the most peremptory form by the use of the word "must," will assume that he is reading a list of legal requirements. Nothing could be further from the truth! *There is no legal foundation whatever for the Department's requirements* (except the last). They are only what the second paragraph of the letter declares them to be: rules which if observed "should minimize the possibility of violation of the antitrust laws." They represent the kind of advice which lawyers advising clients give in order to keep their clients out of trouble. But they are not rules of law.

Violation of these rules will not necessarily result in a violation of law. Obedience to these rules will not, as the letter points out, necessarily insure against prosecution.

With this analysis we are ready to translate the letter from official Legalese into colloquial English. So translated it reads:

"My dear Mr. Secretary:

These committees are your babies. We have formulated a few rules which, if observed, should help the members stay out of trouble. As long as these rules are observed we don't think they'll violate the antitrust laws, but of course, you never can be sure. Therefore don't be surprised if we come after the committees civilly or criminally at some later date.

Yours sincerely,
THE DEPARTMENT OF JUSTICE"

In order to understand this letter it is important to understand the duties and powers of the Department of Justice. The Department of Justice in enforcing the antitrust laws, is not an administrative agency. It cannot make binding interpretations of those laws; that is for the Courts. The Attorney General does not give legal advice to citizens; he advises only the President and heads of departments. Most important of all, the Department of Justice has no power to license violations of the antitrust laws. A violation of these laws remains a violation no matter what its opinion. Any injured person may assert that violation in a private action for an injunction or treble damages.

What an advisory committee may do without violating the antitrust laws is therefore to be determined by an examination of the applicable statutes and rulings of the Courts. The Department of Justice cannot exempt what the law does not exempt. Equally it cannot impose limitations on the members of committees that the law does not impose.

The Department of Justice has apparently attempted to state the conditions under which the possibility of violating the antitrust laws would be so remote that business men can act on committees with perfect safety, and the agencies involved can be certain of being spared the embarrassment of having their advisory committees prosecuted or even investigated. An attempt has been made to give business men a sense of security by stating in advance the conditions under which they are sure to be exempt from prosecution. The attempt has failed. Complete security has not been achieved. The Department still reserves all its rights. And the price for what has been given is far too high. The illusion of security has been achieved by rules which, to the extent that they are followed, strip the committees of the power to function effectively.

The Rules Are Unworkable

It must be clear to anyone with experience in this field that the rules are unworkable. No one supposes that a group of individuals can be summoned from their businesses, brought together to a meeting in Washington without previous contact with each other or with other persons affected, and be expected during the course of the meeting, to evolve answers to complex and difficult questions. To solve the problems presented, the committee often requires information not possessed by all the members collectively. This information must be collected, sometimes from existing statistics, and sometimes from the industry. Responsible representatives of an industry will not overrate their competence to deal with all problems that arise. They will want to check their own opinions against those of other persons in the industry who may have different experience and different views. They will want to consult with, and use the services of, their trade association professional staffs and to obtain the views of counsel, especially in those industries affected by outstanding antitrust decrees and cease and desist orders. They will want to do all these things before their formal meetings with the government. Often they will want to urge upon the agency an industry position contrary to that contemplated by the government, and will want to prepare their presentation unhampered by

(Continued on page 32)

Effect of Time and Temperature of Burning on Quicklime Properties*

J. A. MURRAY[1], H. C. FISCHER[2] and D. W. SABEAN[3]

Synopsis

Pure calcite, sized to pass a No. 10 sieve and to be retained on a No. 20 sieve, was calcined in an electrically heated rotary tube, which was provided with continuous feed and discharge. Over 40 calcinations were made, with maximum material temperatures varying from 1700 F. to 2400 F. and with overall retention times varying from 46 min. to 474 min. The density, porosity, surface area, and reactivity with water were determined on each of the resulting quicklimes.

Porosity, surface area, and reactivity with water are closely related. Highly porous limes have high surface area and a fast rate of reaction, while limes of low porosity are characterized by low surface area and slow reaction with water.

The results show that porosity of the quicklime is determined primarily by the rate of heating prior to and during calcination, while the heating conditions subsequent to calcination have relatively little effect. When material of this size required 35 min. or more to reach a temperature of 1700 F., the resulting quicklime was always highly porous, regardless of subsequent treatment. Quicklimes calcined in increasingly shorter periods were correspondingly less porous.

The properties of quicklime and of the products made from quicklime are affected by many factors such as the composition and texture of the original limestone, the methods used in burning the stone and the handling and exposure conditions to which the lime is subject during cooling and storage. The present report is concerned only with the effect of burning conditions upon the activity, porosity, and surface area of quicklimes produced from a pure crystalline calcite. Some of the other variables are still under investigation and will be the subject of later reports.

Commercially, quicklime is produced in both rotary and shaft kilns. The products of the two types of kilns differ markedly, even when made from the same stone. This is first shown by the variation in activity of the two types of lime upon treating with water, and subsequently by differences in the hydrated products; putties and hydrates produced from the two types of lime have different settling rates, yields, and flow characteristics.

Many of these differences have been attributed to the wide difference in retention time in the kiln. It is not unusual for material to be in a shaft kiln for 75 to 100 hr., whereas under rotary kiln operation the time from cold stone to cold quicklime may be 2 hr. or less. The time ratio of about 50:1 may well be expected to produce a difference in properties.

The temperatures which prevail in the two types of kilns are not well known. In a rotary kiln, it is difficult to measure anything but the momentary surface temperatures of the particles as they slide down the bed of tumbling material. In a shaft kiln, it is impossible to see or measure anything but the lumps at the edge of the kiln. The results are that the maximum temperatures in commercial kilns are largely unknown, but the opinions of operating men are that they probably lie in the range of 1800 to 2300 F. in both rotary and shaft kilns.

One of the earliest studies of the effect of temperature of burning on the properties of quicklimes was that by Bleininger and Emley (1).[4] They burned 4-lb. samples of stone, encased in saggers, in a downdraft muffle kiln at a series of controlled temperatures. They found that the slaking reaction was a means of fixing the proper burning temperature for a given lime and that the relation between porosity and calcining temperature gave valuable information in regard to the best calcining temperature.

The work of Bleininger and Emley was done under static conditions with no variations being made in the heating schedule. Other investigators (2, 3, 4) have similarly burned commercial stones under static conditions. No references have been found to burning under controlled conditions of agitation on a laboratory scale.

One of the objections to burning under static conditions is the difficulty of obtaining an accurate determination of the variation of temperature of the stone with time. If stone is to be burned in a muffle, the muffle may initially be at the desired temperature but the introduction of the cold stone drops the muffle temperature. A later recovery takes place, but it is impossible to determine exactly when and how closely the charge approaches the muffle temperature.

Another objection to burning under static conditions is that it usually requires the charge to be in lumps of ¼-in. or larger, a size too large for laboratory tests. Any necessary grinding or pulverizing, particularly in a humid atmosphere and with an active lime, results in an uncontrolled pickup of carbon dioxide and water and produces a change of unknown magnitude in the activity and possibly in other properties of the lime.

Burning in a rotary kiln therefore appears to have several advantages over static burning for laboratory investigations. It permits accurate control and measurement of the time-temperature relations, it utilizes stone of small size so that the lime produced may be evaluated without further grinding and therefore with minimum opportunity for accidental pickup of carbon dioxide and water, and finally, the rotary kiln permits control of the atmosphere during burning. For these reasons, a rotary kiln was selected as the preferable calcining unit for this study.

Impurities in limestones may have an important effect upon the properties of the resulting quicklimes. Since later portions of the program will be con-

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* Presented at the 1950 Annual Meeting of American Society for Testing Materials.

[1] Associate Professor, [2] Research Associate, and [3] Research Assistant, Massachusetts Institute of Technology, Cambridge, Mass.

[4] The numbers in parentheses refer to the list of references appended to this paper.

cerned with the evaluation of the effect of impurities, it is desirable to have data obtained on a stone without impurities for comparison. Consequently, a crystalline calcite was used as a raw material for these tests.

The properties of the quicklimes which were selected for study were reactivity with water, porosity, and surface area. Reactivity with water is the one of most interest from the user's viewpoint. All three of these properties are more or less interrelated, for a high degree of activity is usually associated with a highly porous lime which also has high surface area.

Equipment and Experimental Methods

Rotary Kiln:

The rotary kiln used on this project consisted of an alundum tube, 1¼ in. inside diameter and 36 in. long, mounted within an electrically heated muffle furnace which was provided with automatic temperature control. The kiln was mounted with a pitch of ¼ in. per foot and was equipped with a variable speed drive so that the rotation could be controlled at will within the range of 0.78 to 8.0 rpm. A scoop-type feeder, which picked up a uniform amount of the calcite on each revolution of the kiln, was used. The discharge from the kiln was collected directly in a glass screw-top bottle so that the transfer from one container to another would be avoided. An attachment held the collector on the discharge end of the kiln in such a manner that the collector and kiln could be purged continuously with an inert gas. For all calcinations, nitrogen was used to sweep the collector and kiln. The total volume of kiln plus collector was about one liter and the nitrogen flow was adjusted to approximately 1¼ l. per min. A small opening was left at the feed end of the kiln so that a probe thermocouple could be inserted, allowing temperature measurements to be made at any desired point over the length of the kiln. The end of the thermocouple was bent at an angle so that the bead of the couple could be inserted and held in the tumbling bed of material. This permitted the measurement of the temperature distribution in the material in the kiln. The muffle furnace which enclosed the kiln was automatically controlled to ±20 F. by a control mechanism actuated by a thermocouple located in the muffle, above the kiln. The temperature fluctuations in the kiln were of appreciably less magnitude than those in the muffle. Figure 1 shows the feed end and side view of the kiln. Figure 2 is a line drawing showing the essential details of the construction.

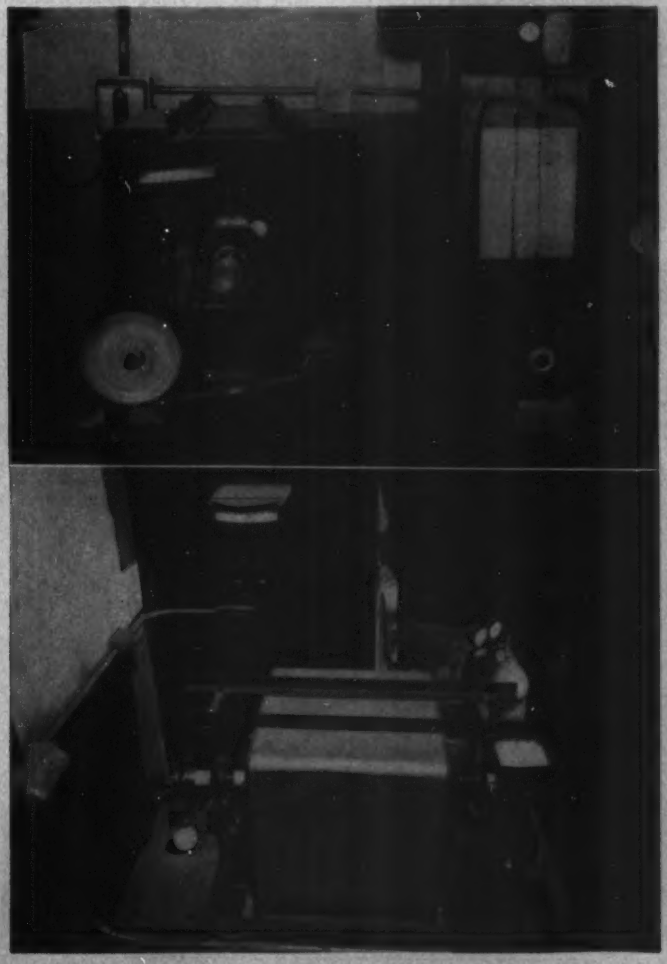

Figure 1.—Rotary Kiln—Feed End and Side View

Calcination in a rotary kiln normally causes some size reduction in the stone due to abrasion and thermal shock. The resulting quicklime may undergo an additional size reduction due to abrasion and also by thermal shrinkage. However the calcite used in this study produced a lime, the gradation which was substantially that of the calcite feed. Little if any shrinkage with practically no dusting occurred during the change from carbonate to oxide.

Lime Slaker:

To establish the reactivity of the lime with water, it was felt that a measurement of the temperature rise on slaking would be a suitable index. It was obvious that, because of the extreme rapidity with which some of these limes slaked, it would be impossible to follow the temperature rise with a mercury thermometer; consequently, an iron-constantan thermocouple was used with a Brown Electronik Recorder. The speed of the recorder was such that the pen will make a complete sweep across the 11-in. chart (0 to 200 C.) in about 2 sec. Since a water-lime ratio was selected which would give a maximum temperature rise of about 40 C. or one-fifth of the chart width, the maximum instrument lag would be less than one-half second, if the reaction were instantaneous. The recorder chart was graduated in 1 C. intervals and could be read to 0.1 C. With a chart speed of 2 in. per min., the time scale could be read to 1 sec.

A Waring Blendor was used for slaking the lime. This gave such violent agitation that it was necessary to decrease the speed by reducing the voltage. Figure 3 is a line drawing of the slaking apparatus. The entire equipment was operated in a constant temperature room, controlled at 20 C. The quicklimes and the distilled water for slaking were both stored in closed containers in the constant temperature room overnight, before the slaking test was made. A ratio of 7 parts of water to 1 part of quicklime by weight was

TABLE I.—PROPERTIES OF QUICKLIMES AS AFFECTED BY TEMPERATURE AND TIME OF CALCINATION

Calcination	Maximum Temperature of Bed, deg. Fahr.	Retention Time, min.	Time to Reach 1700 F., min.	Ignition Loss, per cent	CO_2, per cent	Surface Area, sq. meters per g.	Porosity, per cent	Bulk Specific Gravity	Activity Coefficient, ΔT_8
19-1	1850	474	182	1.7	0.2	11.3	46.6	1.78	33.4
19-2	1850	230	88	0.8	0.1	13.8	47.8	1.74	35.2
19-3	1834	185	72	..	0.1	16.1	48.1	1.73	35.2
19-4	1857	103	39	0.1	0.1	16.1	48.1	1.73	36.3
19-5	1850	97	37	0.2	0.1	16.6	48.1	1.73	36.3
19-6	1760	83	34	0.3	0.1	16.2	48.4	1.72	35.5
19-7	1727	74	31	..	0.3	16.2	48.4	1.72	36.3
19-8	1707	67	29	2.9	2.1	17.1	48.4	1.72	33.2
21-1	2020	474	163	1.9	0.1	8.15	46.0	1.80	30.2
21-2	2018	230	79	0.6	0.1	13.1	47.2	1.76	34.3
21-3	2020	103	35	..	0.1	12.3	46.6	1.78	33.6
21-4	2023	95	33	..	0.1	12.2	43.9	1.87	30.5
21-5	2023	92	32	0.1	0.1	9.55	44.2	1.86	30.9
21-6	2020	82	28	0.2	0.1	11.8	43.3	1.89	26.0
21-7	2000	76	27	..	0.1	11.5	43.9	1.87	26.6
21-8	2000	67	23	0.1	0.1	11.2	42.4	1.92	22.3
21-9	1853	63	24	..	0.4	7.49	37.0	2.10	11.4
21-10	1780	49	20	1.2	1.1	9.50	41.2	1.96	14.2
21-11	1765	46	19	1.1	1.1	8.86	38.4	2.05	12.0
23-1	2218	474	146	1.1	0.1	8.40	45.7	1.81	31.5
23-2	2220	474	146	1.1	0.1	9.82	46.3	1.79	33.2
23-3	2223	308	95	1.1	0.1	10.9	46.3	1.79	33.8
23-4	....	230	71	0.9	0.1	9.50	45.7	1.81	31.9
23-5	2229	127	39	0.1	0.1	7.60	33.7	2.21	7.9
23-6	2225	103	36	0.1	0.1	7.45	34.0	2.20	8.4
23-7	2218	82	25	0.1	0.1	7.48	34.9	2.17	11.4
23-8	2204	67	21	0.1	0.1	6.40	31.0	2.30	6.4
23-9	....	66	20	0.1	0.1	5.60	29.7	2.34	6.7
23-10	2158	48	15	0.1	0.1	6.59	29.4	2.35	5.1
23-11	2184	47	15	0.7	0.6	4.54	25.8	2.47	3.5
25-1	2362	474	136	0.3	0.1	4.28	43.5	1.88	20.8
25-2	2397	308	86	0.8	0.1	7.62	45.0	1.83	30.3
25-3	2400	230	65	0.6	0.1	8.60	44.5	1.85	28.7
25-4	2396	103	29	0.2	0.1	4.17	27.9	2.40	7.2
25-5	....	100	28	0.1	0.1	3.26	33.6	2.21	9.6
25-6	2412	93	26	..	0.1	2.64	21.6	2.61	3.6
25-7	2402	82	23	0.1	0.1	2.91	21.6	2.61	2.2
25-8	2397	74	21	..	0.1	1.81	18.6	2.71	2.0
25-9	2407	67	19	0.1	0.1	2.28	20.4	2.65	2.6
25-10	2402	49	14	0.2	0.1	2.53	21.0	2.63	2.0
25-11	2341	48	14	0.2	0.1	2.35	19.8	2.67	2.4

used for all slaking tests. This ratio provided enough water to prevent loss of heat in evolving steam, but not enough to cause drowning.

Surface Area Equipment and Measurements:

The surface areas of the quicklimes were determined by the low-temperature nitrogen adsorption method, based on the Brunauer, Emmett, and Teller Theory (5). The apparatus and techniques used were the same as reported by Staley and Greenfeld (6) in evaluating quicklimes and hydrates produced from a commercial limestone.

Density and Porosity:

The true densities of these materials were determined by helium displacement and the apparent densities by mercury displacement. From these two densities the porosity was calculated by the following formula:

$$P = \left(\frac{D_{He} - D_{Hg}}{D_{He}} \right) \cdot 100$$

where:

P = porosity in per cent,

D_{He} = density by helium displacement, and

D_{Hg} = density by mercury displacement.

Loss on Ignition and Carbon Dioxide Content of Lime:

The values for loss on ignition and for carbon dioxide content were used to establish the completeness of burning and as an index of the amount of air slaking which had occurred during handling. The material was sampled after cooling overnight in a closed container. The methods used for these determinations were those of A.S.T.M. Methods of Chemical Analysis of Limestone, Quicklime, and Hydrated Lime (C 25—44).[5] The results are given in *Table I* to the nearest 0.1 percent, except in the case of several CO_2 determinations which were in the range of 0.02 to 0.04 percent and which are reported as 0.1 percent.

Calcite:

The calcite used in this investigation was the type designated as "cleavable calcite" by the supplier. As received it consisted of crystals ranging in size from ¼ in. up to 2 in. Most of the crystals were clear and colorless, but a few had some surface impurities. The crystals were hand-picked to eliminate any containing obvious impurities. The selected crystals were then crushed and screened to pass a No. 10 and to be retained on a No. 20 sieve. The sized material was washed with water to remove adhering dust of fracture and dried in an electric oven before use.

The material thus prepared was of such quality that the impurities could not be detected by normal wet analytical methods. Its purity was confirmed by spectographic analysis.

The density of the calcite as determined by both helium and mercury displacement was found to be 2.70 g. per cu. cm. Surface area of the calcite was determined as 0.015 sq. m. per g.

Results

Temperature Distribution in Kiln:

The temperature distribution in the kiln was measured by inserting the probe thermocouple through the feed end of the kiln. Measurements were made at 2-in. intervals with the thermocouple bead embedded in the charge.

[5] 1946 Book of A.S.T.M. Standards, Part II, p. 114.

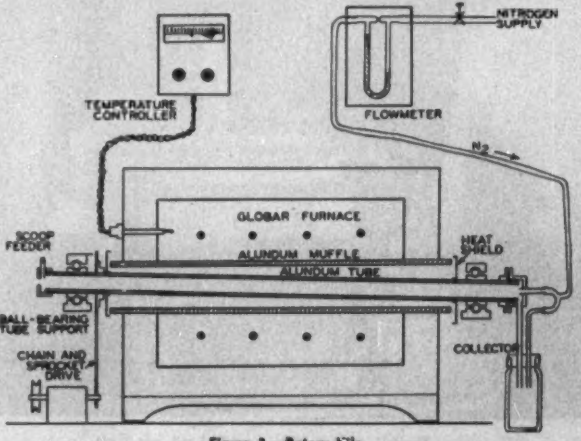

Figure 2.—Rotary Kiln

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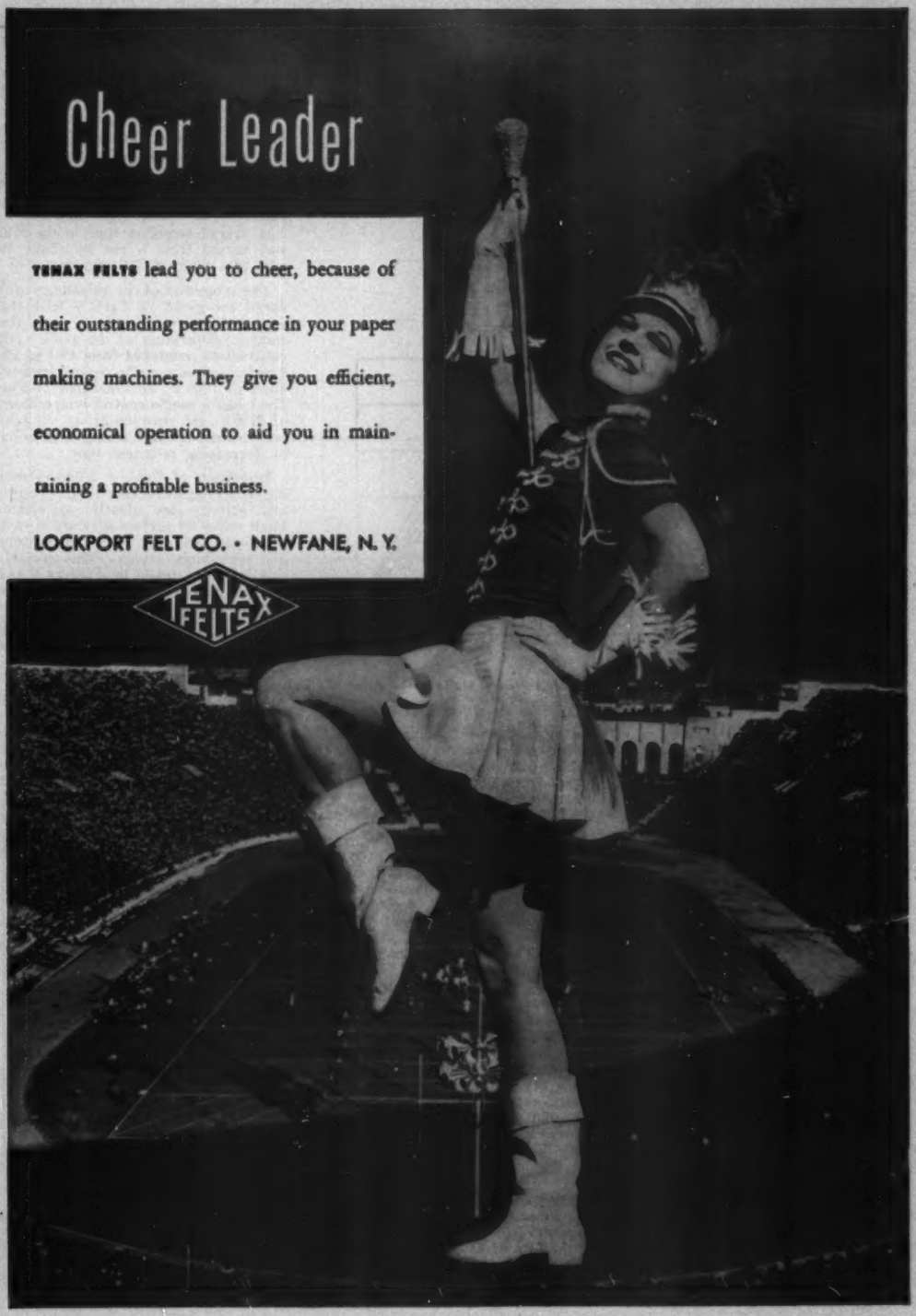
TENAX FELTS



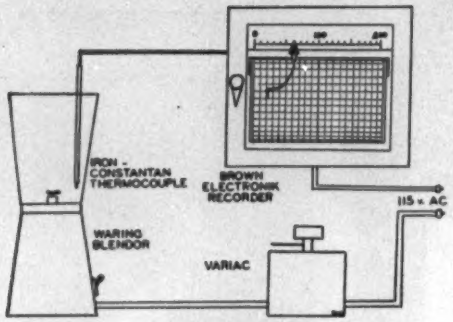


Figure 3.—Slaking Apparatus

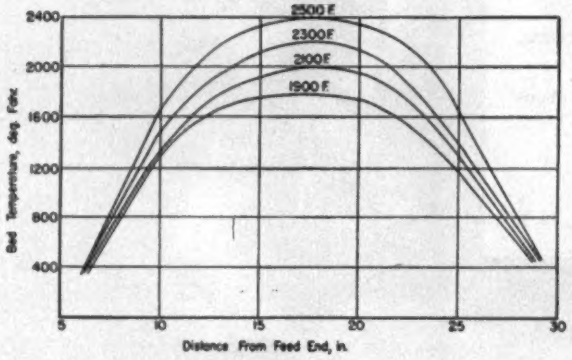


Figure 4.—Typical Temperature Distribution in Kiln at Various Muffle Temperatures

Typical kiln temperature distribution curves are shown in *Figure 4* for muffle temperatures from 1900 to 2500 F. In general, the point of maximum temperature was close to the center point of the kiln, and the maximum kiln temperature was roughly 100 F. less than the temperature at which the muffle was controlled. The maximum kiln temperature decreased as the retention time of the material in the kiln was decreased. In some cases the maximum temperature in the kiln was almost 200 F. lower than the indicated muffle temperature when the retention time was very low.

Activity:

It is obviously desirable to have some single numerical value which will be indicative of the activity of the quick lime when slaked with water However, it is extremely difficult to obtain such a figure which can be justified on theoretical grounds. Careful study of the slaking curves indicates that at least two types of curves were produced. When temperature rise is plotted against time using linear coordinates it is found that the curves representing the active limes are practically straight until the major portion of the quicklime has been exhausted. On the other hand, the inactive lines produce a curve which is hyperbolic in character. The plot of temperature rise against time is practically straight on log scales for a large part of the slaking period. A few limes appear to be intermediate in character between these extremes, and do not give straight-line plots on either linear, semi-log, or log plotting.

Because of the variation in type of slaking curve, an empirical point was selected to be indicative of the rapidity of slaking. The point selected was the temperature rise which had occurred 5 sec. after adding the quicklime to the water. The "activity" determined in this manner is designated by the symbol ΔT_5. This point is admittedly a compromise, but has proved to be very useful in comparing the several lines. The most serious error in using it as an index of activity is found with the extremely active limes. With some of these, the slaking was complete in 3 to 4 sec., and the reading at 5 sec. gives the impression that these limes are somewhat slower to slake than is actually the case. *Figure 5* presents typical slaking curves and illustrates the effect of variation in kiln temperature on the rate of development of heat. The limes represented by the curves of *Figure 5* had a uniform retention time in the kiln of 67 min.

Further studies of the mechanism of slaking are planned as a part of the complete program. Pending the completion of these studies, the activity index as mentioned above forms a usable index to some of the characteristics of the limes, although its purely empirical foundation must not be overlooked.

Relation Between Burning Conditions, Activity, and Porosity:

Muffle temperatures were controlled at a series of fixed temperatures, namely, 1900, 2100, 2300 and 2500 F. The overall retention time in the kiln was varied from a low of about 46 min. to a high of 474 minutes.

The properties of the quicklimes produced are given in *Table I* with the data grouped in accordance with the control temperature of the muffle. All calcinations numbered from 19-1 to 19-8 inclusive had a muffle control temperature of 1900 F., all numbered 21-1 to 21-11 had a muffle control temperature of 2100 F., etc. In each group, the several calcinations are arranged in order of decreasing retention time.

Inspection of *Table I* discloses that the properties of surface area, porosity, and activity are closely correlated. High values of surface area are always associated with high values of porosity and with high activity. This correlation is better shown by *Figures 6 and 7* where activity and surface area are plotted against porosity.

The effect of burning temperature on the properties of the quicklime cannot

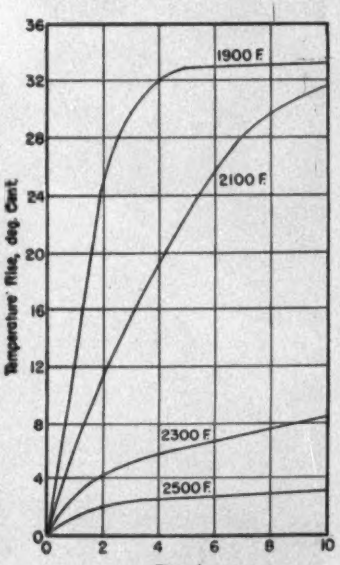


Figure 5.—Effect of Calcining Temperature on Slaking Activity of Lime

Retention Time = 67 minutes.

Numbers Represent Muffle Temperatures.

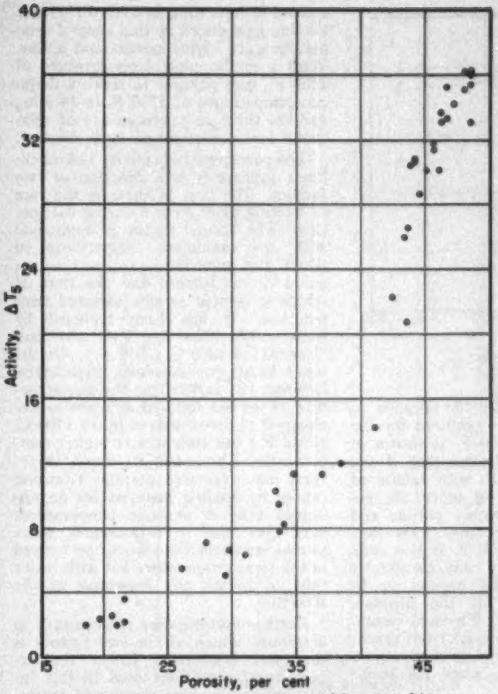


Figure 6.—Relation Between Activity and Porosity of Lime

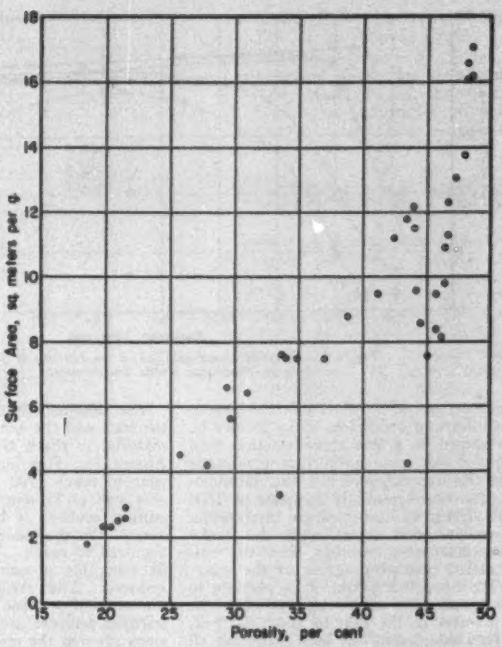


Figure 7.—Relation Between Surface Area and Porosity of Lime

be completely separated from the effect of retention time. *Figure 8* is a plot of porosity against retention time for the limes produced at the four different muffle temperatures. *Figure 9* is a similar plot of activity coefficient, ΔT_5, against retention time. From these figures it is apparent that both porosity and activity decrease with an increase in burning temperature at all retention times. This relationship has frequently been noted in the static calcination of commercial limestones.

The normal concept of the relation of time of burning to the properties of the lime is that any increase in retention time beyond that required for complete calcination causes shrinkage of the lime and decreased porosity due possibly to the fluxing action of impurities. It is tactily assumed that the formation of this flux is a slow process and that time is essential to the attainment of maximum shrinkage of the lime.

However, since the material used in this investigation was high-purity calcite, no fluxing action was possible. Nevertheless, limes were produced which were inactive, of low porosity, and to which the commercial terminology "dead-burned" could be applied.

With the exception of the limes produced at the very lowest burning temperature, those produced by keeping the retention time short (50 to 100 min.) are all less porous, less active, and have less surface area than those produced with retention times of 200 min. or more (see *Figures 10 and 11*). The data indicate that, for each burning temperature, an optimum retention time may be located which produces greatest porosity and activity. If the material is held in the kiln for a longer time than this optimum, the porosity decreases, but at a very slow rate. On the other hand, if the retention time is less than the optimum, the porosity and activity may be greatly decreased, particularly at the higher temperatures. Further study of the data indicates that the rate of heating of the material, either prior to calcination or during calcination, or both, is an important factor. A decomposition pressure of one atmosphere is attained with

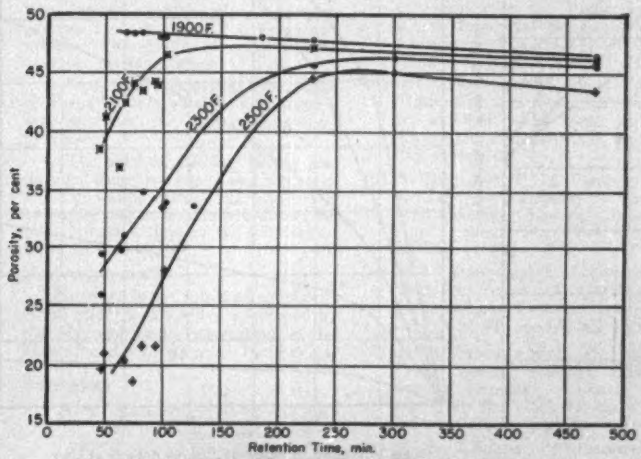


Figure 8.—Effect of Retention Time on Porosity of Lime
Numbers Represent Muffle Temperatures.

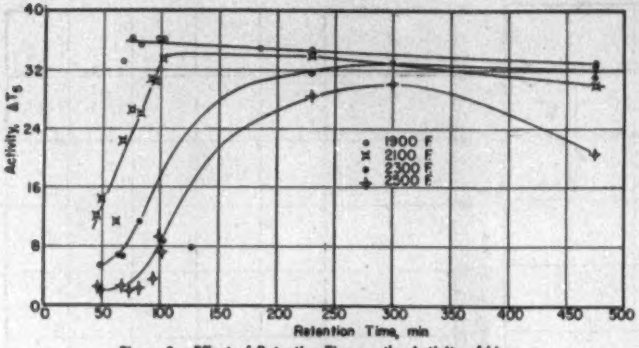


Figure 9.—Effect of Retention Time on the Activity of Lime
Numbers Represent Muffle Temperatures.

calcite at 1647 F. (897 C.) under equilibrium conditions (7). It may be assumed, as a first approximation, that under the non-equilibrium conditions in the experimental kiln the decomposition is substantially complete at 1700 F. Using the temperature distribution measurements made with the probe thermocouple, together with the calculated rate of progress of the material through the kiln, it is possible to calculate the time required for the material in the kiln to reach 1700 F. This calculation has been made for all burns. The results are given in the fourth column of *Table I.*

The relation between the porosity of the lime and the time required for the material to reach 1700 F. is shown in *Figure 12.* This indicates that if the time to reach 1700 F. with calcite of this size is 35 min. or more, the resulting product is highly porous and active. On the other hand, if the time required to reach 1700 F. is less than 35 min., the porosity may be greatly reduced. The results appear to be almost independent of the ultimate burning temperature. Physical limitations prevent the material from reaching 1700 F. (and complete calcination) in less than 29 min. when the muffle control is operating at 1900 F. Hence all limes produced at this control temperature are highly porous and active. With a muffle control temperature of 2500 F., it is possible to reach a material temperature of 1700 F. in 14 min., and the limes so produced are of relatively low porosity and very inactive.

The porosity (and activity) of quicklimes apparently is a function of two factors. The first of these is the rate of heating prior to and during calcination. The second factor is concerned with the maximum temperature to which the material is exposed subsequent to calcination and the time at which it is held at this elevated temperature. It has been reported by Zimens (8) that the CaO structure "loosens" at 1200 C. (2192 F.). On the other hand, von Adrenne, Endell and Lehman (9) report that the fine structure of ignited sintered dolomite is unchanged at temperatures up to 1400 C. (2552 F.) but collapses at higher temperatures. The possibility exists, therefore, that excessive thermal vibration caused by holding material for an extended time at elevated temperatures may give rise to a loosened, more porous structure than would be formed at the same temperature but with lesser time to permit the loosening of the structure.

Further investigation is necessary to determine which of the two factors is the more important. Under the experimental conditions used in this investigation the first mentioned factor, the rate of heating prior to and during calcination, appears to be the controlling factor.

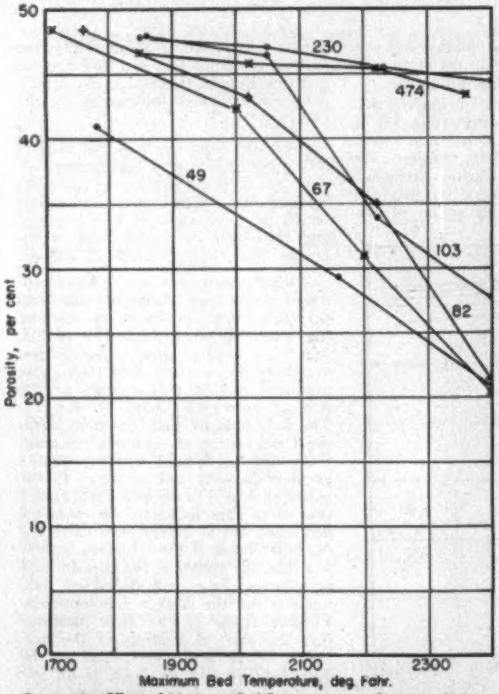


Figure 10.—Effect of Maximum Bed Temperature on Porosity of Lime
Numbers Represent Retention Time in Minutes.

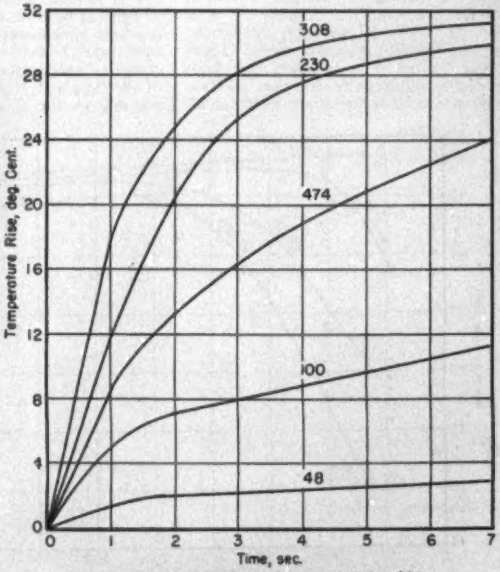


Figure 11.—Effect of Retention Time on Activity of Lime
Maximum Kiln Temperature of 2400 F.
Numbers Represent Retention Time in Minutes.

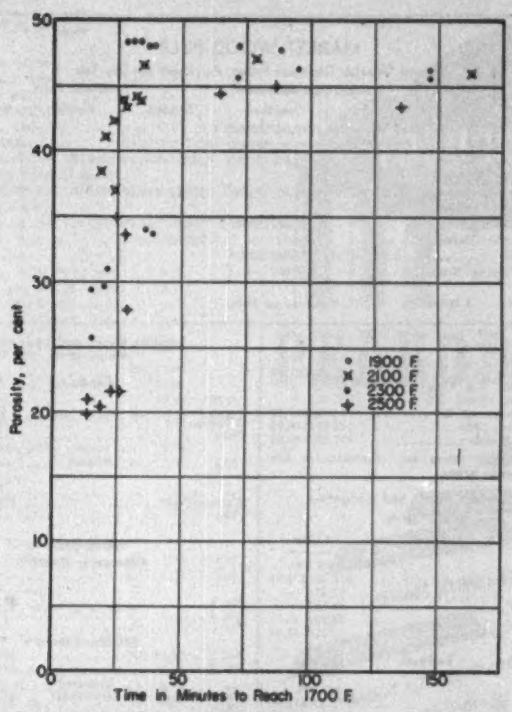


Figure 12.—Relation between Porosity of Lime and the Time Required for the Material to Reach 1700 F.

Conclusions

1. The porosity, surface area, and activity of quicklimes prepared from calcite are closely related. High values of porosity are associated with high values of surface area and with high activity.

2. With equal retention times in the kiln, higher temperatures of burning produce limes with lower porosity and activity. This effect is more pronounced at short retention times.

3. An optimum retention time which produces highest porosity and activity may be found for each burning temperature.

4. The rate of heating before and during calcination has a much greater effect on the porosity of quicklime than either the maximum temperature or the total retention time in the kiln subsequent to calcination.

Acknowledgment:

This paper is the result of work conduced under a fellowship sponsored by the National Lime Association at the Massachusetts Institute of Technology.

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AUSTRALIAN NOTES

Imports of newsprint in rolls during the month of January totaled 11,197 tons, an increase of 1,901 tons over the December figure. But sheet imports were again down, this time to 105 tons compared with December's 132 tons.

Imports of other printing papers were as follows (all figures being in hundredweights of 112 pounds): Antique, 115 (U.K. 75, Norway 40); imitation art, 4,240 (U.K. 3,875, Sweden 270, Netherlands 95); machine processed coated, 1,174 (U.K. 1,041, Sweden 113, Italy 20); other coated printings, 1,580 (U.K.); monotype, 77 (U.K.); offset, except embossed, 3,341 (U.K. 1,262, Norway 979, Austria 813, Finland 287); offset embossed, except m.g. litho, 278 (Sweden 124, Norway 78, U.K. 76); lithographic machine glazed, 2,751 (U.K. 804, West Germany 688, Sweden 609, Austria 528, Norway 122); machine glazed, except m.g. litho, 2,344 (Sweden 1,820, U.K. 206, West Germany 195, Norway 118, Austria 5); esparto, one side supercalendered, 378 (U.K.); one side supercalendered, except esparto, 3,663 (Norway 2,284, Sweden 705, U.K. 472, West Germany 202); two sides supercalendered, containing 25 percent or less mechanical pulp, 886 (U.K. 836, Sweden 50); other printings containing 25 percent or less mechanical pulp, 475 (Norway 366, U.K. 109); magazine and other printings containing more than 25 percent mechanical pulp, 50,481 (U.K. 15,143, Sweden 13,809, Norway 12,700, Finland 6,875, Netherlands 934, U.S.A. 699, Italy 321); glazed imitation parchment, 372 (Sweden 194, U.K. 178). Total shipments from the United States were 699 hundredweights valued at £3,264.

* * *

Unless the latest power rationing proposals of the Tasmanian Hydro-Electric Commission are modified the whole newsprint plant at Boyer may have to shut down completely for several days. In addition, if restrictions are enforced, the new mill and other developments carried out over the past 3½ years at a cost of nearly £4 million will be forced to lie idle for about two years. During the past two months Tasmanian power rationing has led to a reduction to 75 percent of that necessary to operate the original plant installed in 1941, and no power whatever has been allowed for the new paper machine, grinders and other equipment constructed and installed during the past 3½ years and now ready to operate after tests made at the beginning of the year.

PRICES

The prices below reflect market quotations in New York at the mill level on standard grades. Does not include spot offerings.

PAPER AND BOARD

Standard News, Delivered Ports
Rolls, contract, per ton $105.00/110.00
Sheets ..... 110.00/ —

F.o.b. Mills, C.l. Frt. allowed, dock, N. Y.

Kraft— per cwt., 40# base wgt.
Standard Wrapping Rolls ..... $7.75/ —
No. 1 Wrapping Rolls 8.25/ 8.50
Standard Bag ..... 7.50/ —

Tissues— per ream 24x36 (480) 10 lbs. 2500 lbs or more

Wh. No. 1 Frd.	$1.95	/$2.25
Wh. No. 1 MG	2.10	/ 2.40
Wh. No. 1½	1.85	/ 2.15
Wh. No. 2	1.85	/ 2.15
Kraft Anti-Tar 20x30	1.85	/ 2.15
White Anti-Tar 20x30	1.95	/ —

Toilet— per case of 100 rolls—1 M sheets

Unbleached 4½x4½	$8.00/$8.25
Unbleached 4½x5	6.60/ —
Bleached 4½x4½	10.00/12.50
Bleached 4½x5	9.85/ —

Per Case of 50 rolls—2000 sheets

Unbleached 4½x4½	$8.00/$9.75
Bleached 4½x4½	6.95/ —

Per Case of 100 rolls—1000 sheets

Facial, 4½x5, 2-ply	$8.95/10.65

Paper Towels— per case of 3750

Wh. Jr. M'tif'd 9½x9½	$5.75
Br. Jr. M'tif'd 9½x12	4.10
Br. Jr. M'tif'd 9½x9½	3.60
Br. Jr. Sgl. fold 9½x10¾	3.65
Bichd. 7½x11, 24/25 rolls	$7.00/7.55

Manila, per cwt.

No. 1 Jute Tag, 100-lb., sheets*	$19.55/21.55
Reg. Jute M.F. 40-lb., sheets*	18.00/20.00
Wrapping Manila	8.75/10.50
Printing Manila	10.50/12.00

* Less usual allowance for rolls.

Gummed Tape— per bdl., 500 bdls. or more

90-lb. 375 ft. GSI	$7.20	/ —
60-lb. 600 ft. GSI	7.20	/ —
35-lb. 800 ft. GSI	8.28	/ —
31-lb. 500 ft. GSO	6.21	/ —

MARKET WOOD PULP

Second Quarter Contract Prices, Per Short Air-Dry Ton

	Varying freight allowances		Atlantic Ports		
	U. S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	‡$85.00/ 90.00	‡$95.00/100.00			
Sulphate, Bleached	135.00/200.00	190.00/200.00	*$275.00/315.00		*225.00/ —
Sulphate, Unbl. Northn.		145.00/175.00	*250.00/295.00	$200.00/ —	
Sulphate, Unbl. Southn.					
Sulphite, Bichd. (Sftwd.)	135.00/165.00	160.00/175.00	*275.00/290.00	*225.00/ —	*225.00/ —
Sulfite, Bichd. (Hdwd.)	155.00/ —				
Sulphite, Unbichd.		150.00/160.00	*250.00/265.00	*200.00/ —	
Sulphite, Unbl'd (Glassine)		164.00/ —	*252.00/ —		
Soda, Bichd.	140.00/142.50	155.00/160.00			
Siderunas, Pulping News	106.00/ —	106.00/ —			

* On dock. † Delivered. ‡ F.o.b. Shipping Point.

Boards, per ton—

Filled News	$107.50/ —
Plain Chip	105.00/107.50
Bichd. Mla. L-d. Chip	147.50/ —
White Pat. coated .020	170.00/ —
Kraft Liners 42 lb.	115.00/117.50
Kraft Corr. .009	122.50/126.00
Binders Boards	137.50/140.00

The following prices are representative distributors' resale prices:

Rag Content Bonds and Ledgers—
White, 20 lb.

Bonds	4 Ctns.
	per cwt.
100% Rag Ex. No. 1	$70.45/$75.90
100% Rag	62.65/ —
75% Rag	48.15/ —
50% Rag	38.90/ —
25% Rag	31.65/ 33.00

Ledgers	4 Ctns.
	per cwt.
100% Rag Ex. No. 1	$72.65/$72.80
100% Rag	63.90/ —
75% Rag	49.40/ —
50% Rag	40.20/ —
25% Rag	33.00/ 34.30

Sulphite Bonds and Ledgers
White, 20 lb.

Bonds	4 Ctns.
	per cwt.
Watermarked	$19.00/$20.50
Plain	18.05/ 19.50

Ledgers	4 Ctns.
	per cwt.
Watermarked	$20.30/$21.80
Plain	19.35/ 20.80

White Book

Conversion Coated	Case
	per cwt.
No. 1	$23.40/$24.65
No. 2	21.90/ 23.40
No. 3	20.40/ 22.40
Machine Coated	
No. 1	$18.15/$18.40
No. 2	16.15/ 16.65
Uncoated	
No. 1 Antique (Watermarked)	$18.65/$19.15
Offset	17.40/ 19.90
A Grade E. F.	17.40/ 18.15
A Grade S. C.	18.15/ 18.65
B Grade E. F.	17.65/ —
B Grade S. C.	16.90/ 18.40

‡ Indicates a price change.

WASTE PAPER MARKET

The following quotations were gathered from major dealers in each market. They are an indication of the price range in which volume tonnage was moving on the date specified. Prices to mills, per ton, f.o.b. cars shipping point (includes brokers' fee.)

	New York	Philadelphia	Boston	Chicago
	May 28	May 28	May 26	May 1
No. 1 Mixed Paper	$20.00/ 21.00	$18.00/ 22.00	$19.00/ 21.00	$20.00/ —
Boxboard Cuts	23.00/ 25.00	17.00/ 20.00	26.00/ —	25.00/ —
Mill Wrappers	25.00/ 30.00	18.00/ 25.00	22.00/ 30.00	22.00/ —
No. 1 News	23.00/ 24.00	20.00/ 22.00	— /22.00	20.00/ —
Over-issue News	30.00/ 35.00	24.00/ 25.00	22.00/ 24.00	25.00/ —
Corrugated Containers	52.00/ 55.00	53.00/ 55.00	51.50/ 53.00	52.00/ —
New Corrugated Cuts	50.00/ 55.00	48.00/ 55.00	55.00/ 65.00	62.00/ —
Double Kraft Ld. Corr. Cuts	115.00/120.00	105.00/120.00	120.00/140.00	120.00/ —
100% Kraft Corr. Cuts	140.00/155.00	125.00/135.00	130.00/170.00	140.00/ —
Used Kraft Bags	85.00/ 95.00	80.00/ 85.00	85.00/116.50	65.00/ —
No. 1 Brown Kraft Paper	90.00/ 95.00	85.00/ 95.00	90.00/110.00	65.00/ —
Super Resorted Br. Kraft	100.00/105.00	95.00/105.00	100.00/125.00	90.00/ —
New Br. Kraft Env. Cuts	160.00/180.00	160.00/175.00	160.00/180.00	150.00/ —
New Br. Kraft Cuts	150.00/170.00	130.00/140.00	150.00/180.00	140.00/ —
No. 1 Gdwd Shvs.	60.00/ 65.00	50.00/ 65.00	75.00/ 85.00	55.00/ —
White Newsblanks	85.00/ 90.00	80.00/ 90.00	90.00/100.00	80.00/ —
No. 1 Flyleaf Shvs.	80.00/ 85.00	80.00/ 85.00	95.00/110.00	100.00/ —
No. 1 Soft Wht. Shvs.	180.00/190.00	170.00/175.00	175.00/195.00	175.00/ —
Super Soft Wht. Shvs.	190.00/200.00	190.00/200.00	190.00/210.00	185.00/ —
Hd. Wht. Shvs.	185.00/210.00	190.00/215.00	190.00/215.00	160.00/ —
Hd. Wht. Env. Cuts	200.00/235.00	200.00/225.00	200.00/235.00	190.00/ —
New Manila Env. Cuts	140.00/150.00	160.00/165.00	140.00/165.00	115.00/ —
Col. Tab Cards	110.00/120.00	110.00/120.00	95.00/150.00	100.00/ —
Manila Tab Cards	170.00/185.00	165.00/190.00	160.00/200.00	165.00/ —
No. 1 Mixed Ledger	95.00/100.00	90.00/ 95.00	87.00/110.00	100.00/ —
White Ledger	130.00/140.00	125.00/130.00	125.00/140.00	125.00/ —
No. 1 Book & Mag.†	30.00/ 35.00	30.00/ 40.00	40.00/ 60.00	25.00/ —
No. 1 Rep'd. Hvy. Books‡	50.00/ 55.00	40.00/ 50.00	60.00/ 75.00	55.00/ —

* Delivered. † Includes Time & Life; no coarse groundwood. ‡ Not to exceed 10% groundwood.

RAG MARKET

New Domestic Cotton Cuttings
OPS Ceiling Price, CPR 28
Delivered Mill Basis

Add 7½% Dealer Commission

No. 1 White Shirts	$21.00
No. 1 Unbichd. Muslins	21.00
Bichd. & Unbichd. Underwears	21.00
Bichd. Canton Flannels	21.00
No. 1 Light Silesias	16.00
No. 1 Light Prints	11.50
No. 1 Blue Overalls	14.50
Suntan Khakis	11.50

Add 10% Dealer Commission

Fancy Shirts	$10.00
Indigo Blues	10.00
Mixed Khakis	8.00
Corduroys	8.00
Cottonades	8.00
No. 1 Washables	6.50

Old Domestic Cotton Rags
(Prices to Dealers, F.o.b. Ship. Pt.)

	Per 100 lbs.
Mixed White	$5.00/$5.50
Cotton Pants & Overalls	4.25/ 5.00
Thirds and Blues, Repacked	3.75/ 4.00
Heavy Wool Tares	3.10/ 3.25
No. 1 Roofing Rags	2.25/ 2.35
No. 2 Roofing Rags	2.15/ 2.25
No. 3 & 4 Roofing Rags	2.15/ 2.25
Roofing Bagging	

Bagging
(Prices to Dealers, f.o.b. N. Y.)

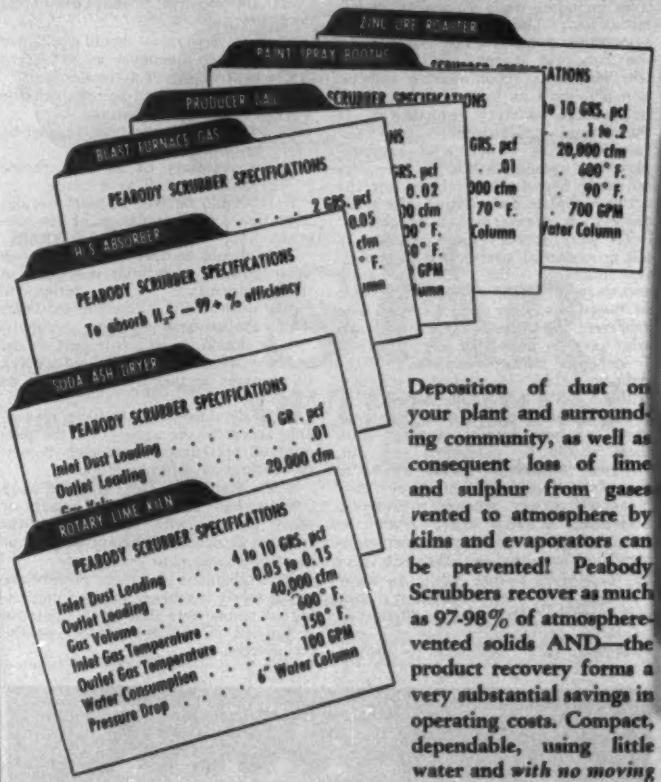
	Per 100 lbs.
Foreign Gunny	$7.50/$7.75
Domestic Gunny, No. 1	$7.50/$7.75
Heavy Wool Tares	8.00/ 8.25
Foreign Manila Rope	8.00/ 8.25
Domestic Manila Rope	7.50/ 8.50
Jute Strings	7.75/ 8.00
No. 1 Sisal Strings	8.00/ 8.25
Paper Mill Tares	5.25/ 5.75
Foreign Scrap Burlap	6.00/ 6.25
Domestic Scrap Burlap	7.00/ 7.50
Austr. Wool Pouches	7.50/ 8.50
New Burlap Cuttings	7.50/ 8.00

MATERIALS

Aluminum, sulfate:		
comi. bags, wks.	cwt.	1.65
iron-free c.l.		3.25
Alcohol, ethyl:		
tax free, dms. c.l.	gal.	1.01 / 1.05½
deld. East Miss.		
Alcohol, methyl:		
Synthetic, Zone 1, dms.		
c.l. fit. alld.	gal.	.44
Casein, acid-prec.:		
dom. sh. pt. c.l.	lb.	.40 / .41½
imp. ex. dock	lb.	.34½/ .41
Caustic soda:		
c.l. wks. solid, 76%, cwt.		3.35
flak. & grd. 100-lb. drums		3.75
liquid 50% tanks		2.55
liquid 70% tanks		2.65
China clay:		
dom. air-float. filler, c.l. wks.	ton	10.00
water-washed, lump, filler		11.00
coating		17.60 /30.50
imported, ex whse.	short ton	15.30 /28.31
Chlorine:		
single-unit tanks, works.	cwt.	2.70
multi-unit	cwt.	3.20 / 4.40
Formaldehyde:		
USP, inh. dms, c.l. wks.	lb.	.0625/ .0675
l.c.l., E. wks.		.0675/ .0725
Fuel oil:		
Bunker C, No. 6 Cal. bvy tanks, refinery	bbl.	1.95 / 2.15
light	bbl.	2.00 / 2.25
Hydrogen peroxide:		
USP, 35% cbys. E. of Miss.	lb.	.23½/ .36½
Lime:		
hydrated, bags, wks. Buffalo	ton	13.50
Rosin:		
B gum, drms, c.l. Savan.	cwt.	8.00
G, H, I, K	cwt.	8.79 / —
FF, wood, do.	cwt.	7.30 / —
Rosin size:		
70%, gum & pale grds, tank cars, south, sh. pt.	cwt.	6.80 / 7.00
Salt cake:		
dom. bulk, c.l. wks.	ton	17.00
wks. frt. all.	ton	20.00 /22.00
Soda ash:		
light, 58%, bags, wks.		1.30
bulk	cwt.	1.30
Sodium silicate 40°:		
turbid. c.l. wks.	cwt.	1.30 /
l.c.l. wks.		1.60 / 1.85
Sodium peroxide:		
dms. c.l. E. of Miss.	lb.	.21
l.c.l. do.	lb.	.21½/ .22
Soybean, protein:		
chem. ind, wks. c.l.	lb.	.24 / —
Cinn. and Chic.		
Sulfuric acid:		
60° Be. cbys. cl. wks.	cwt.	1.75 / -
l.c.l. wks.	cwt.	2.05 / 2.85
Sulfur:		
crude, c.l. mines, contract,	long ton	21.00 /22.00
f.o.b vessels Gulf		22.50 /23.50
Export, f.o.b. Gulf		25.00
Sulfur dioxide:		
liquid, comi. cyl. wks.	lb.	.09
multi-unit cars	lb.	.0535
Starches:		
pearl corn, bags, c.l. wks.	cwt.	6.02 / —
white dextrines, c.l. wks.	cwt.	7.41 / —
potato, Idaho. c.l. wks.	cwt.	5.50 / -
potato, Maine, c.l. wks.	cwt.	5.50 / —
tapioca, conv. dextrines	cwt.	7.75 / 8.50
low, Siam, on dock N. Y.		5.75 / 6.00
Talc:		nominal
domestic, 50-lb. sacks, c.l. wks.	ton	25.00 /30.00
Titanium dioxide:		
anastase, c.l. deld., bags	lb.	.21 / .21½
l.c.l. deld.	lb.	.22 / .22½
rutile, c.l. deld.	lb.	.23 / .23½
l.c.l. deld.	lb.	.24 / .24½

reduce chemical losses with

PEABODY SCRUBBERS



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ADVISORY COMMITTEES

(Continued from page 21)

the presence of a government representative. And when they present their argument they will want the presentation to be made by those who in their opinion are best qualified to make it—possibly members of the committee, possibly a trade association secretary most familiar with the statistics of the industry, possibly counsel. These things the regulations say shall not be done.

In spite of the express recognition of trade associations in the Act, the regulations exclude trade association secretaries from appointment to committees and the practice is to exclude both them and counsel from meetings.

Section 709 of the Act requires all orders to state that "there has been consultation with industry representatives including trade association representatives." Thus not only are trade association personnel not excluded by the Act, but it may be questioned whether the exclusion of trade association personnel as such is not a violation of the statutory requirement. Is the statute satisfied merely by consultation with people who are employed by companies that are members of trade associations? Does not the act contemplate consultation with trade association representatives as such?

To deny access to the meeting to the professional advisors to the industry concerned—the trade association secretary and counsel—is to exclude in many cases the only persons who represent the industry as a whole and who have no individual axes to grind. It deprives the government and the industry alike of skilled assistance without any compensating benefit.

The agencies can enforce their own views of how formal meetings with them should be conducted and can, however mistakenly, refuse access to their meetings to whomever they please. But any attempt to restrain committee activity apart from the formal meetings will break down completely. Committee members will meet by themselves before going to their meetings with the Government; they will discuss problems left to their consideration among themselves and with outsiders; they will seek to inform themselves of the necessary facts on which to base their formal discussions and advice; and in doing so they will make use of such facilities as they have at their disposal—advice of counsel and of trade association personnel, statistics, and so forth.

Under the present regulations they are required to do these things informally, and some will do them furtively. The possibilities of transgressing the law will be less if they are done openly.

What Should Business Do About It?

If business men are to carry out their responsibility, they must press for revision of the advisory committee rules. Such revision can be made by the agencies themselves. If they refuse, industry should apply to Congress for express recognition of its necessary powers.

Such revised rules should recognize the following freedoms as necessary to the functioning of a committee:

1. It should be free to organize for work, i.e., it should have
   (a) an industry chairman elected by its members,
   (b) a secretary of its own choice and such staff as it needs.
2. It should be free to meet for deliberation and formulation of its program.
3. It should be free to conduct such investigations as it finds necessary in the performance of its duties, to gather information, to compile statistics which the industry is willing to supply.
4. It should be free to report to the industry whose voice it is, and to seek its opinions so that it may present its views.
5. It should be free to have reasonable access to the agency for the purpose of presenting to it such recommendations as it thinks proper.
6. It should be free to have such professional and technical staff or other persons with special qualifications as it deems necessary present at its conferences with the agency.

It is submitted that these powers are so obviously necessary to the functioning of committees that their existence is implied in the very nature of the committees.

Not every committee will want to exercise all of these powers at all times. But unless the committees have them they will not be free to represent their industries as they should be represented.

What About the Dangers of Antitrust Violation?

With these freedoms goes, as always, correlative responsibility. If committee members are to cut loose from the agencies' apron strings they will have to rely upon themselves and not upon the government to assure them that they are not violating the law. This is as it should be. The assurance that they receive at the present time is illusory, for the Department of Justice still reserves the right to prosecute if it believes the law has been violated. The preliminary meetings and discussions which committee members now hold are not protected. To the extent that they are informal they are more dangerous than formal meetings because such meetings lack the safeguards imposed by prepared agendas, minutes, the presence of counsel, and the sense of responsibility imposed by formal meetings.

The advisory committee is provided for by law. The law does not require the presence or supervision of a government representative. A meeting of a committee which does no more than discuss problems of the industry vis-a-vis the agency and the advice which it is to give is equally lawful whether attended or not attended by a government representative.

Certain elementary safeguards suggest themselves. These are the same kind of safeguards as are applied in the case of properly conducted trade associations. The committees should have counsel who should attend the meetings. Agendas should be prepared in advance wherever possible. Accurate minutes should be kept of the proceedings. The business of the meetings should be kept within the statutory purposes of the advisory committees. If these precautions are taken the meetings should be entirely lawful and the risk of prosecution taken by committee members will be no greater than the risk taken by the same persons as members of their trade associations. In fact, it will be less because the scope of committee activities will be narrower. In any event, the risk must be taken if industry is not to deliver itself over completely to government domination.

What To Do Meanwhile

While carrying on a campaign to have the agencies amend their rules to provide for working committees, or, if they will not do so, for legislation to the same end, the committees must function. Controls are here; orders are being issued; new orders must be recommended; old orders require revision to eliminate inequities.

To the extent that the existing rules permit, the agencies should be pressed

to exercise their discretion in the direction of sensible administration. They should be urged to exercise their power under the rules to invite to the meetings those persons such as trade association secretaries and counsel, whom the committees want invited. During the last war the attendance of such committee personnel (with rare exceptions) was found to be helpful. Preconceived notions should not stand in the way of assembling the best working groups available.

In addition the committees should not hesitate to organize themselves to carry out their functions. Where their duties require it they should select industry chairmen, appoint counsel, secretaries and staffs, hold meetings and do whatever is necessary to equip themselves to give the best advice they can to the agencies whom they advise. They should do so openly and not furtively. Their meetings should be surrounded by all the safeguards which competent counsel recommend.

When they do these things they will be acting outside the rules and outside the protection (if any) of the Attorney General's letter. But they will not, for that reason alone, be in violation of the antitrust laws. And only in that way will they be able to carry out their responsibilities.

NEW LITERATURE

National Assn. of Manufacturers. Pamphlet, "Settlement of Labor Disputes and Wage Stabilization." Reviews briefly pertinent provisions of the Defense Production Act, the intent of Congress in providing for a clear separation of wage stabilization from the settlement of disputes, labor's withdrawal from the Wage Stabilization Board and other mobilization agencies, industry's efforts to effect an equitable compromise, etc.

Casey & Case Coating Co. Bulletin, "Corrosion Control Coatings—Vinyl Base for Exteriors and Tank Linings." Gives specific properties and contains chemical resistance chart. Includes price sheets and application instructions.

Allen-Bradley Co. Bulletin 600, "Manual Starting Switch" for A-C and D-C Motors. Describes and illustrates typical installations and outstanding features of each of the six switch models. Also contains complete dimensional and engineering data. Catalog, Motor Control," 92 pp. Sales copy.

Field Research Div., Paper Cup and Container Institute, Inc. April-May issue "Single Service News." Features "'On the Job' Feeding." Present the headaches involved but also the benefits arrived at by in-plant feeding. Includes tables. Also "Cups & Containers Stockpiled for Defense."

Doubleday and Co. Book, "Forests and Men" by William B. Greeley, 255 pgs., price $3. Presents the story of foresters and forestry in the U. S.,

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functionally styled cowl
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heavy duty hydraulic brakes
universal joint
precision mast construction
super-strength forks
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one-piece drive axle assembly
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hoist cylinder trunnion mounted
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with comments on conditions in foreign countries.

National Safety Council. Booklet, "Safety Pays the Smaller Business." A stepped-up effort to interest small business in the economic and social benefits of accident prevention.

Shafer Bearing Corp. Catalog No. 51. Illustrates and describes the full line of their products including Pillow Blocks, Flange Units and Cartridge Units, Duplex Units, etc. Also contains complete engineering and load rating data and illustrates many product applications.

Towmotor Corp. Technical data, Certified Job Study No. 105, "A Pallet Load in Less Than One Minute." Contains many informative on-the-job photos of mass handling in a modern warehouse.

M. J. & W. B. Wheelwright. Book, "Practical Paper Technology, 128 p., trade edition $2.25, library edition $3.00. Obtainable through PAPER TRADE JOURNAL, cash with order.

U. S. Dept. of Commerce. Volume 14, "Bibliography of Technical Reports" (July-December, 1950), price $1. Indexed according to subject.

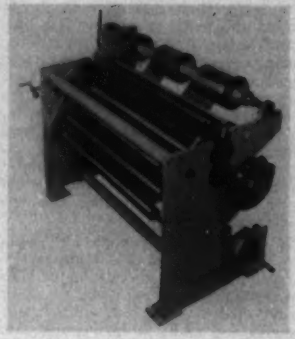
NEW EQUIPMENT

Plastic Film Slitter & Rewinder

A low cost, versatile and ruggedly constructed machine for slitting and rewinding acetate, polyethelene, and other films of thicknesses from .001" to .020" in widths as small as ¼" on all standard models, has been marketed. The machine features easy operation and compactness. A minimum amount of floor space is required. Parent and rewind rolls, as well as all controls, are in front of the machine. All driving elements are carefully guarded; the machine is safe to operate. Threading is easy; a simple device lifts the blades away from the main roll.

Slitting is accomplished by ordinary razor blades. Specially designed blade holders allow easy and accurate adjustment for width of cut. An attachment for rotary burst-cut slitting is available. Blades are adjustable for angle of cut.

Rewind mandrels are constructed of tubing for light weight and are locked axially to insure a smooth rewound edge. A new device permits control of the core slippage while the machine is operating. A single adjustable-while-running slip clutch is designed to compensate for speed change due to increase in diameter of rewound rolls.



Wrinkling of material is prevented by employing a sufficient number of idler rolls and by the use of a heavy rubber platen roll.

Replacement Magnets

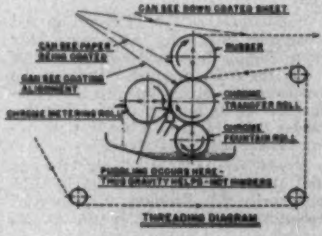
The availability of high strength replacement magnets for pipeline trap separators is announced. The replacement unit includes the magnet casting of greatly increased magnetic strength and the face plate to which it is attached. Installation then involves only the substitution of the new plate for the old, it is stated.

The new magnets will fit Eriez and other magnetic traps of 2", 2½", 3" and 4" diameters.

Contracoater

This new precision reverse roll coating machine was developed for the purpose of overcoming operational difficulties experienced on existing coating machines. Designed to apply lacquers, resins, plastisols, and organisols of a wide range of viscosities and formulation, to paper, foil, film or fabric, primary consideration was given to control of coating weights to a high degree of accuracy.

Unlike most reverse roll coaters that contain a well of coating material in the top nip of two rolls, the "Contracoater" uses a fountain roll arranged as shown schematically on Fig. 1. Coating material is picked up by the fountain roll, and transferred to a center applicator roll. Metering to precise thickness is accomplished by a metering roll prior to the time the coating is applied to the web. The



novel arrangement of edge doctors and dams under the applicator and metering rolls utilize gravity to confine coating to any desired width. By locating the dams in this fashion, creepage of coating beyond the dams is eliminated, an essential in coating webs where a dry edge is desired.

Operationally, the "Contracoater" rolls can be run at speed to inspect flow and distribution of coating on the rolls prior to application to the web. When the coating is satisfactorily distributed on the rolls, air controls bring the web into contact with the applicator roll, and a synchronous drive brings the operation up to speed. Thus there is no loss of web or coating material in making ready.

Two other basic advantages of the roll arrangement are the inherent exclusion, rather than inclusion, of trapped air that causes bubbles on the coated surface of the web; and the elemination of the flow factor of the coating materials themselves that affect control of thickness is conventional reverse roll coaters.

Threading variations and auxiliary equipment allow for knife coating, direct roll coating and dip coating.

Pocket-Size pH Meter

A revolutionary pocket-size pH meter and companion probe unit permit instant, on-the-spot pH determinations. Completely self-contained with batteries, in a bakelite case 3" x 5⅜" x 2½", this instrument is furnished, camera fashion, in an ever-ready case with novel plastic tubes of buffer and KCl solutions. Total weight is 3 lbs.

Supports and beakers are completely eliminated by combining the calomel and glass electrodes with the sample holder, in a single polyethylene probe unit, a revolutionary idea which completely protects them and requires a sample volume of only 0.5 ml, it is said. Meter is scaled from 2 to 12 pH for easy reading, and a simple adjustment gives readings from 0 to 14. Accuracy of 0.1 pH is obtainable. Hearing-aid type batteries provide up to 1300 hours of operation. The electrometer tube, switch and input connector are sealed in a single unit to ensure freedom from high humidity difficulties. The one-knob control and continuous reading features of this instrument simplify operation for untrained personnel. Grounded samples can be directly measured because of no external power connections. The instrument and electrode are completely shielded.

Dryer Steam Joint

A new revolving joint with a rotating feed or syphon pipe, is designed for use on drums, roll and dryers. Comes in all sizes from ½ to 5" inclusive and can be used with or without the rotating feed or syphon pipe.

The joint is capable of high speed rotation, requires no lubrication, and is very low in turning torque, the manufacturers states. Rotation takes place on a flat face carbon seal, the opposite side of which has a ball seat

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AMERICAN PAPER AND PULP ASSOCIATION'S PAPER PRODUCTION RATIO REPORT

(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

	Apr. 14	Apr. 21	Apr. 28	May 5	May 12	May 19
1951	103.1	105.1	101.5	102.7	102.3r	103.1
	Apr. 15	Apr. 22	Apr. 29	May 6	May 13	May 20
1950	94.4	96.9	95.6	97.5	97.1	97.3

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1950	92.6	93.6	96.7	95.4	96.4	97.7	85.3	99.6	96.1	101.0	99.6	93.7‡	95.8‡
1951	99.5‡	101.5‡	102.3‡	103.1‡									

‡ Preliminary.
r Revised.

COMPARATIVE YEARLY SUMMARIES

	1944	1945	1946	1947	1948	1949	1950	1951
Year to Date	88.4	89.7	100.0	105.3	100.9	89.4	95.5	101.7
Year Average	88.1	89.4	100.1	104.3	96.2	88.6	95.8‡	

PAPERBOARD OPERATING RATIOS†

	Apr. 14	Apr. 21	Apr. 28	May 5	May 12	May 19
1951	102	107	105	107	104	106
	Apr. 15	Apr. 22	Apr. 29	May 6	May 13	May 20
1950	88	93	92	92	93	92

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1950	88	92	91	92	91	94	82	100	96	102	101	93	94
1951	102	105	104	105									

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

Note: The chart shows the ratio through December 1950 on the basis of 6-day capacity. Beginning with January 1951 the ratio is shown on the new basis of normal 6- and 7-day capacities. Corresponding weekly and monthly ratios for 1950 on the new basis, shown in the tables above, are somewhat lower.

Paperboard operating ratios continue on the basis of a 6-day week.

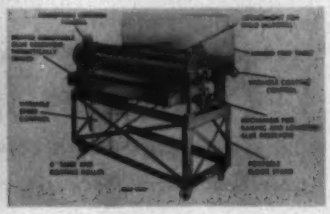
† Per cents of operation based on "inch-hours" reported to the National Paperboard Association.

to compensate for all roll eccentricity. This shape of carbon ring would have a tendency to compress rather than separate when subjected to shock or pressure, thus would entirely eliminate the breakage of the carbon seals. Floating spring-seated gland which seats the carbon ring is sealed at back by a Teflon wedge. Gasket will handle temperatures safely from minus 120 to 500 degrees it is stated.

46" Gluer

The 46" gluing machine was developed for controlled coating applications to wide flexible or rigid materials up to ¾" thickness.

Features equal 6" diameter glue roller and ductor roller designed to assure rigidity over the full 46" width; frames of cast iron, a thermostatically controlled heating unit; the glue tank is hermetically sealed to insure uniform distribution of heat; removable tank for quick cleaning, and a dial glue coating control which accurately measures the right amount of adhesive for any material. An adjusting feed table quickly accommodates cardboard or flexible materials.



OBITUARIES

T. M. Heermans, 62, assistant manager of sales of Allis-Chalmers centrifugal pump department, died suddenly on May 17 in Milwaukee.

Mr. Heermans came to Allis-Chalmers as a student apprentice in 1910. He served in various capacities in the centrifugal pump department before being named assistant manager of sales in 1940. He was a leader in the development and design of Allis-Chalmers line of close-coupled type single-suction pumps.

Dr. Harry P. Brown, 64, Professor of Wood Technology, New York State College of Forestry, Syracuse, N. Y., died of a heart attack on May 24.

Franklin W. Olin, 91, founder of the Olin Industries, which includes among its subsidiaries the Ecusta Paper Corp., Pisgah Forest, N. C., died in Barnes Hospital, St. Louis, May 21, after a heart attack.

Ward S. Patterson, 46, executive assistant to the vice-president in charge of engineering, Combustion Engineering–Superheater, Inc., New York, died at the Northern Westchester Hospital, Mt. Kisco, N. Y., on May 21.

CLEARING HOUSE

HELP WANTED

We can place—Assistant to president of paper converting plant specializing on facial and sanitary tissue; supt., asst. supt., and salesman for wet machine board mills; 2 pulp mill supts.; merchandising mgr. for market research, advertising and sales promotion work; pulpwood procurement man; foreman for converting plant on school papers; asst. to vice pres. for sales administration work paper bag plant.

Chemist and chemical engineers; finishing foreman; machine foremen Cylinder and Fourdrinier machines; salesmen and sales engineers for paper and pulp mill equipment; master mechanics; plant engineers; turbine operator; electricians; shipper-receiver with board mill experience; cost accountant; machine tenders and back tenders; millwrights.

LIST YOUR CONFIDENTIAL APPLICATION WITH US to keep informed of attractive positions open in the pulp and paper mills.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St., Boston 8, Mass.
SPECIALISTS IN PLACING PULP AND PAPER MILL EXECUTIVES

J-1

SALESMAN with experience in the pulp and paper making processes is desired by a manufacturer of special pulp treating machinery to travel in the United States and Canada. Previous sales experience desirable, but not necessary. This is an excellent opportunity for an aggressive, ambitious man of high character and ability. Address Box 51-214 care Paper Trade Journal. J-1

SUPERINTENDENT OF CONVERTING DEPARTMENT

Old, established New England school supply house entering into converting field. Experienced man needed to take complete charge. Must be familiar with ruling, sheeting and cutting. In reply, give complete information as to age, experience, salary desired, family, and reasons for seeking change. Reply to Box Number 51-207, care Paper Trade Journal. J-1

We are converters in the Metropolitan area doing a national business in specialties in seven figures. We need a man who is 40-50 years old, is familiar with the essentials of the paper business, particularly the tissue field, more particularly facial and sanitary tissues, who has a creative mind and imagination, has a smattering of advertising and merchandising, who is aggressive and persistent and who is looking for an opportunity to capitalize on his talents. Start as assistant to president. Salary possibilities 12-15 thousand at end of year or two depending on individual. Our people know of this advertisement. Full particulars with your reply please. Box #51-257 care Paper Trade Journal. J-8

WANTED—Experienced Supervisor to take charge of wood yard. In reply, state qualifications and previous employer. Salaried position. Mid-Western Mill. Address Box 51-276 care Paper Trade Journal. J-22

HELP WANTED

SALARIED POSITIONS $3,500 to $35,000. We offer the original personal employment service (established 41 years). Procedure of highest ethical standards in individualized to your personal requirements. Identity covered; present position protected. Ask for particulars. R. W. BIXBY, INC. —117 Dun Bldg., Buffalo, 2, N. Y. TF

PRODUCTION CHIEF

Paper converting, nationally known. Printing, coating, gumming, laminating, finishing operations. Lifetime position for top-flight production executive. Our people know of this ad. Send full details confidentially to President, Box 51-222, care Paper Trade Journal. TF

WORKING SUPERINTENDENT for small, fast growing Eastern mill making lightweight specialties. Cylinder machine experience essential. State qualifications and salary expected. Address Box 51-87 care Paper Trade Journal. TF

WANTED — EXPERIENCED, COMPETENT PURCHASING AGENT for an eastern chipboard mill. Must be capable and fully experienced. Furnish details of experience, capabilities and references. Excellent opportunity. Address Box 51-153 care Paper Trade Journal. TF

MODERN up and coming integrated mill in Mid West has opening for an Experienced Paper Mill Superintendent. Splendid opportunity for right man. Good working conditions with good salary. Man must be familiar with water, steam and solution finishes as well as crepe papers. No others need apply. Write Box 51-263 care Paper Trade Journal. J-8

PROJECT ENGINEER—CALIFORNIA. 5 years experience. Processes and machinery for manufacture of floor coverings, wallboards, insulations, building materials. Permanent position. Salary open. Moving expenses allowance. PABCO PRODUCTS INC., 1500 Powell Street, Emeryville, California. Jy-13

WANTED — Machine Tenders and Back Tenders for corrugating medium and liner mill. Fourdinier and cylinder machines. Located in Western Pennsylvania; good working conditions; pleasant surroundings and very good labor relations. Call collect—Tarentum 1470. TARENTUM PRODUCTS CORPORATION, Tarentum, Pa. TF

MID-WESTERN FOURDRINIER SPECIALTY MILL has opening for experienced Production Superintendent. References required. Address Box 51-278 care Paper Trade Journal. A-31

WANTED—Two experienced Machine Tenders; Two experienced Back Tenders; Two experienced third hands. Opportunity for back tenders to qualify for machinetenders. Specialty Kraft Mill. Middle West. Fourdrinier machines. Steady employment. Good wages. Address Box 51-277 care Paper Trade Journal. J-22

WANTED — TOP GRADE SALESMANAGER for an eastern chipboard mill. Fully experienced and capable. Furnish details of experience, capabilities and references. Excellent opportunity. Address Box 51-78 care Paper Trade Journal. TF

SITUATIONS WANTED

EXECUTIVE ACCOUNTANT

Capable, cost minded administrative executive, age 40, available immediately. Fully experienced in multi-plant paperboard, folding carton and printing industry. Box 51-197 Paper Trade Journal. J-8

CHEMIST—Experienced in mill operations, supervision of quality control in the manufacture of test liner, all grades of boxboard, corrugated and specialty items. Successful developments indicate ability in directing research. Fully qualified to head a laboratory staff. Address Box 51-265 care Paper Trade Journal. J-8

CHEMICAL ENGINEER—B.S. Degree. 10 years experience in kraft pulp and paper industry. Desires position in South Central States. Address Box 51-264 care Paper Trade Journal. J-15

CHEMICAL ENGINEER returned from abroad. Designed and operated large plants. Desires to connect with organization contemplating construction program or new mills. Sulphate, semi-chemical pulps, fine papers and test board. Address Box 51-266 care Paper Trade Journal. J-1

FOR SALE

FOR SALE

Sandusky Suction Drum Roll—111" perforated face—14 ft" diameter.

Cone 2¼ to 12" Pipe Threading Machine.

3—Packer—6 plates—Witham Vats—new.

12—Sole plates 1 x 12"—various lengths.

Also a sizeable supply of plain and rubber covered rolls; cast iron and steel pulleys, and V-belt sheaves. Write and tell us what you need—we may have it.

EMPIRE BOX CORPORATION
Stroudsburg, Pennsylvania
J-1

For Sale and Wanted
all grades
WASTE PAPER
GIOVE CO., INC.
557 Water St., N. Y. ORegon 3-4160-1-2-3
Inquiries Solicited J-1

RATES FOR CLEARING HOUSE ADVERTISING

HELP WANTED—10c a word. Double rate for heavy face type. Minimum charge $3.50.

SITUATIONS WANTED—10c a word, double rate for heavy face type. Minimum charge $3.50. If repeated ½ rate will be charged for each consecutive repetition.

FOR SALE—10c a word. Double rate for heavy face type. Minimum charge $3.50.

WANTED—10c a word. Double rate for heavy face type. Minimum charge $3.50.

OPPORTUNITIES—10c a word. Double rate for heavy face type. Minimum charge $3.50.

Classified advertising space may also be purchased at $8.50 per single column inch. All classified advertisements are payable in advance.

If box number is used—70 cents additional.

Address replies to advertisements appearing under Box Numbers in care of PAPER TRADE JOURNAL, 15 West 47th Street, New York 18, N. Y.

FOR SALE

FOR SALE

Motor driven stack directly connected by Waldron flexible coupling with herringbone gear reduction driven G. Kohler system electric hookup.

9 roll stack (Holyoke) 80" wide.
1 bottom steel roll 18" dia. with 10" journal.
3 intermediate steel rolls 12" dia. with 6" journals.
3 cotton rolls—14" dia.
1 paper roll—10" dia.
1 steel lag roll 10" dia.
Water cooled bearings.
Web frame 17" between guides so intermediate rolls can be removed through sides.
Compound levers and weights.
2 shaft hand revolving reversible to take 30" dia. roll. Drive consists of D.C. Diehl 75 H.P. Motor 230 V with Cutler Hammer, magnetic clutch and Kohler system for variable speed.
Address Box 31-185 care Paper Trade Journal J-1

FOR SALE

1—84" 9-roll Supercalender Stack. Complete with drives.

J. J. ROSS COMPANY

250 Frelinghuysen Ave., Newark, N. J.
Tel BIgelow 3-3720 J-1

FOR SALE

1—Waldron two sided Synchroset Coater —146" wide, practically new.

J. J. ROSS COMPANY

250 Frelinghuysen Ave., Newark, N. J.
Tel. Bigelow 3-3720 J-1

FOR SALE

Toilet Winders

2—72" Hudson-Sharp (Surface type winder)
1—84" Gissinger

J. J. ROSS COMPANY

250 Frelinghuysen Ave., Newark 5, N. J.
Tel BIgelow 3-3720 J-1

FOR SALE—One Hudson Sharp 81" Winder Drum Type. Will run towels 11" x 7½", 11" x 13" and 11" x 13½"—and toilet tissue 4¼" x 4½" x 5". Address Box 51-248 care Paper Trade Journal. J-8

FOR SALE—1—S-10-H Broughton Oscillating Shower #250-H for 138" wire with two master strainers unused. $515.00 shipping pt. Address Box 51-226 care Paper Trade Journal. J-1

FOR SALE

36" Beck Sheeter, jogger delivery only.
42" Moore & White Sheeter, with or without Layboy.
45" Hamblet Sheeter.
58" Finley Sheeter.
100" Dillon Sheeter.
92" Hamblet Sheeter with M & W Layboy.
68" Oswego mill type Power Cutter.
57" Brown & Carver Power Cutter.
32" Hobbs shear cut Slitter.
92" Hamblet Sheeter.
74" 10Z-G Seybold Auto. Power Cutter, with automatic power.
52" Cameron 278 model 5 Slitter.
NEW Wolverine "Cub" Sheeters 18" and 30" width.
NEW "Famous" Balers, both hand and power.

THOMAS W. HALL COMPANY, Inc.

120 West 42nd St., New York 18
(Plant at Stamford, Conn.)

FOR SALE—1—122" Heavy Duty Single Knife Horne Cutter, suitable for Board or Pulp. Address Box 51-275 care Paper Trade Journal. TF

FOR SALE—68" Moore & White Sheeter with layboy; 68" & 72" Rewinders. Address Box 51-273 care Paper Trade Journal. J-8

FOR SALE

1—Sandusky Couch Roll—126" drilled face x 22" diameter.
1—123" 3 bowl revolving reel.

BEARINGS
72—Top and bottom Dryer Bearings 7" diameter x 12" long.

BEATERS
1—Dilts Iron Tub Laboratory Beater. Beater roll 14" diameter x 10½" face.

CALENDER STACKS
1—9 roll 68" Calender Stack.
1—2 roll pressure calender—32" x 100".
1—72" 4 roll calender stack. (Extra heavy duty).

CHEST
1—Cast Iron Stock Chest, 25' long x 6' high. (With agitator).

CHIPPER
1—48" Murray 4 knife Chipper—anti-friction bearings.

CRUSHER & HAMMERMILL
1—Murray Chip Crusher.
4—Jeffrey Hammermill.

CYLINDER MOLDS
2—30" diameter x 72" face.
1—30" diameter x 79" face.
2—36" diameter x 54" face.
1—36" diameter x 90" face.
1—48" diameter x 72" face.
4—36" diameter x 78" face.
1—30" diameter x 92" face.
1—36" diameter x 72" face.

DRIVES
1—#65½ Reeves Drive.
1—#24 Reeves Drive
1—Reliance Electric Drive, complete with 5 gear head motors.
2—#3 Reeves Drives (totally enclosed).

V-BELT DRIVE
1—21½" diameter x 7½" face, 5 groove.
1—16½" diameter x 7½" face, 5 groove. (With clutch).

DRYERS
1—Complete unit, consisting of 6 dryers, 36" diameter x 38" face, including frames, gears, anti-friction bearings.
7—24" diameter x 48" face.
1—49" diameter x 91" face.
3—36" diameter x 96¼" face.
1—36" diameter x 143" face.
1—24" diameter x 130" face.
1—48" diameter x 70" face.
1—48" diameter x 82" face.
2—Dryers 48" diameter x 134" face.
1—24" diameter x 92½" face.
2—28" diameter x 48" face.
1—84" diameter x 48" face.
1—60" diameter x 60" face.
1—48" diameter x 68" face.
3—36" diameter x 66" face.
1—20" diameter x 61" face, complete with frames.
2—36" diameter x 72" face.
8—24" diameter x 60" face.

GUILLOTINE CUTTER
1—60" Cutter.

FLAT SCREENS
1—4 plate Sharrie Flat Screen
7—Packer, 12 plate, roller shoe type.

FRAMES
Vertical frames for 100 dryers, 48" diameter, with bearings.

JORDANS
1—Horne Jordan.
2—Noble & Wood Mammoth.

LIME SLUDGE FILTERS
3—IMPCO Lime Sludge Filters, vacuum type, 5' diameter x 4' face.

MOTORS
Write us regarding your requirements.

PRESSES
3—Beta Primary Presses, complete, 145" face. Anti-friction bearings. Also all types of rolls for 145" wet end.

PULLEYS
Various cone and assorted pulleys.

PULPERS
1—Jones Pulper. Complete with motor and drive.
1—Noble & Wood Pulper—Iron Tub.
1—Lanneys Pulper.

PUMPS
Various sizes of Centrifugal and Plunger Pumps. Write us regarding your particular requirements.
4—Sharrie Brothers circulating pumps, each 4,000 g.p.m.

REEL
1—123"—3 bowl Revolving Reel.

REFINERS
2—#1 Claflin Refiners.

ROLLS
Felt, Table, Press, Breast, Couch, etc. Various sizes and types. (Bronze, Rubber, Iron, etc.)

ROTARY SCREENS
1—#2 Bird Rotary Screen.
1—#2A Bird Rotary Screen.

SAVEALLS
1—#5 Bird Saveall.
2—Savealls, 36" diameter x 138" face cylinder molds, iron end vats.

SHEETERS
1—60" Moore & White Sheeter with Layboy and 9 roll backstand.

SHREDDERS
2—Daniels Rag Cutters.

SLITTERS & WINDERS
1—48" Cameron—Type 48-4-B
1—42" Cameron—Type 24-2-A.
1—118" 2 drum Waldron
3—112" Cameron—Type 18.
1—104" Beloit two drum winder.
1—84" Cameron Constant Tension with pneumatic control.
1—42" Cameron—Type 6.
1—52" Cameron—Type 8-5.
1—62" Cameron—Type 26-3A.
1—42" Johnstone Slitter.
1—62" Moore & White 4 drum winder.
1—82" Cameron—Type 10-10.

STOCK PUMPS
1—10 x 20 Sharrie Duplex.
1—7 x 16 Sharrie Duplex.
1—10 x 20 Triplex, with motor.
Advise us to your requirements.

SUCTION COUCH ROLL
1—Sandusky Couch Roll 126" drilled face x 22" diameter.

SUCTION BOXES
3—136" face Suction Boxes.

VACUUM PUMPS
1—N-82 Nash, for Fulton-Midwest System.
1—#4 Nash Hytor Vacuum Pump.

WET MACHINE
1—77" Rogers Wet Machine.

YANKEE DRYERS
1—48" Face x 84" Diameter, Frames & Bearings.
1—60" face x 60" diameter including frames and anti-friction bearings.

We are always in the market to purchase your surplus or idle machinery. What have you to offer?
Wanted Cylinder and Fourdrinier Machines (complete mills).

Paddy Ross, Pres. **J. J. ROSS COMPANY** Ben Kurs, Treas.

250 Frelinghuysen Ave. Tel.—Bigelow 3-3720 Newark 5, N. J.

FOR SALE

Beaters

1—Jones broke beater 2000 lbs. Stainless steel bars and tub, excellent condition, new in 1943
2—75 x 55" Rabus, bronze filled
1—62 x 56", Iron tub Valley Iron Wks
1—Broke beater 72 x 54", with rag catcher

Calenders (Machine)

1—114" nine roll
1—96" seven roll
1—92" nine roll
1—80" seven roll

Calenders (Super)

1—94" eleven roll Norwood with speed range 50—2000 FPM with M G set, excellent condition.
1—92" nine roll Norwood
1—72" nine Roll Holyoke
1—55" nine roll Holyoke

Cutters

1—156" Hamblet duplex
1—130" Hamblet duplex
1—100" Dillon duplex
1—84" Clark single
1—70" Clarke single

Chippers

1—84" four knife Carthage chipper

Dryers

1—12 ft. x 184" Yankee
2—8 ft. x 184"
6—5 ft. x 174"

Digester

3—14 ft. diameter Globe

Drives

1—20 HP Downingtown spiral bevel gear drive
1—30 HP Rice Barton spiral bevel gear drive

Grinders

1—100" Hanchett
1—40" grinder

Presses (Pulp)

4—Thune presses for de-watering pulp

Rolls (Press)

3—32 x 232" rubber covered
1—26 x 162"
1—26 x 236, granite

Rolls (Suction)

1—36 x 240" suction couch
1—30 x 103" suction couch
1—22 x 130" suction couch
1—18 x 142" suction couch
1—34 x 200" suction press
1—30 x 190" suction press

Screens

4—Waterous Quiller type pulp screens
2—16 plate Harmon flat screens

Slitters & Winders

1—208" Moore & White four drum winder
1—190" No. 19 Cameron
1—120" Moore & White four drum winder

FRANK H. DAVIS COMPANY
175 Richdale Ave.
Cambridge 40, Mass.
J-18

FOR SALE

FOR SALE

Brand new #102 Potdevin flat and square bag machine latest model, ¼ to 6 lbs., ex. Brooklyn warehouse. Complete with formers, motor and Reeves drive. Will sell under cost. Could also consider change for aniline printer, receiving difference. Omega, Box 230, Quito, Ecuador, S.A. J-8

BOUGHT — SOLD

Soda Ash—Caustic Soda
Titaniums—Lithopone—Zinc Oxides
Glycols—Cellosolves—Ethanolamines
Bichromates—Dyes—Colors, etc.

CHEMICAL SERVICE CORPORATION
60-64 Beaver St., New York 4, N. Y.
J-1

FOR SALE

One only used Bellis and Morcom Vertical 2 cylinder, 2 stage, double acting dry vacuum pump. 6700 ft. displacement, cylinders 27½" dia. x 13½" stroke, complete with 350 H.P., 257 R.P.M., 60 cycle, 2200 volt synchronous motor, separate motor driven exciter and complete starting equipment. Box 51-230 care Paper Trade Journal. J-8

FOR SALE BY OWNER

Four 3A - 100" Bird Screens non-ferrous construction with 24 cut bronze screen plates, front and skimming boxes, copper dam, high pressure cleaning showers and 440 volt, 3 phase, 60 cycle motors. In operation approximately two years. In excellent condition. Contact Weyerhaeuser Timber Company, Purchasing Department, P. O. Box 275, Springfield, Oregon.
J-22

FOR SALE—PAPER COATING RODS — Wire wound EQUALIZERS and blank rods. DE NEVE & CONSLER CO., Box 817, Rochester, 3, N. Y. J-1

PAPER COATING MACHINERY MANUFACTURERS — Waxing, Oiling, Carbon Laboratory Coating and Treating and Flat Ream Measuring and Converting Machines. New improvement. THE MAYER MACHINE COMPANY, INC., 1313 Buffalo Road, Rochester, 11, N. Y. TF

FOR SALE—74" Knowlton Traveling Shear Cut-off Knife.—Bargain. Address Box 51-105 care Paper Trade Journal. TF

FOR SALE—65" Seybold Paper Cutter; 36" Slitter & Rewinder, 48" Sheeter with Layboy; 30" Waldron 6-color Wall Paper Printing Press; 29 x 40 Thomson Platen Die Cutter; 6" Brightwood Box Machine. Address Box 51-317 care Paper Trade Journal. TF

FOR SALE — Marrenford Fully Automatic Coreless Rewinder. High speed continuous winding. 12" to 36" widths, 20 feet to 130 feet lengths. Marrenford Machine Co., 3980 Ridge Road W., Rochester, 13, N. Y. J-1

SMALL KRAFT MILL for sale in the East, making light weight Kraft. Reasonably priced. Address Box 51-274 care Paper Trade Journal. J-15

FOR SALE—1—"49" Finlay, single Rotary Sheeting Machine. Sheet length—19¼" to 72". Hamblet single layboy. 6 roll backstand. 5 HP motor. Reeves Drive. Also, a Moore & White 32" Sheeter. G. R. GOLDMAN PAPER COMPANY, 316 N. 3rd. Street, Phila., 6, Pa. J-1

GOVERNMENT BIDS

PROPOSALS
FOR FURNISHING

PAPER AND ENVELOPES FOR THE U. S. GOVERNMENT PRINTING OFFICE

SEALED PROPOSALS will be received until 10 a.m., E.D.S.T., June 11, 1951, in the room of the Joint Committee on Printing, in the Capitol, Washington, D. C., for furnishing the paper for the public printing and binding, and blank paper and plain envelopes for the use of the Government departments and establishments in the District of Columbia, for the terms of 3 months for paper and 6 months for envelopes beginning July 1, 1951, deliveries to be f.o.b. Government Printing Office Warehouse, or warehouse siding, Washington, D. C. The proposals will be opened in the presence of and the award of contracts made by the Joint Committee on Printing to the lowest and best bidders for the interest of the Government whose bids are in conformity with the requirements of the proposals. The Committee reserves the right to reject any or all bids, or to accept any bid or any part and reject the other part, if, in its opinion, such action would be in the interest of the Government.

Blank proposals containing the instructions, schedule, and specifications may be obtained by addressing John J. Deviny, Public Printer, Washington, D. C.

Contracts will be entered into for supplying the quantities required, whether more or less than the estimates, as provided in paragraph 15 of the proposal for paper and paragraph 13 of the proposal for envelopes.

The approximate estimated quantities set forth in detail in the schedules comprise:

PAPER

4,000,000 pounds newsprint paper; 1,255,000 pounds machine-finish book paper; 20,000 pounds machine-finish book paper; 250,000 pounds english-finish book paper; 3,500,000 pounds offset book paper; 225,000 pounds antique book paper; 100,000 pounds water resistant (text) book paper; 670,000 pounds supercalendered book paper; 1,740,000 pounds coated book paper; 1,050,000 pounds mimeograph paper; 135,000 pounds duplicate copy paper; 9,275,000 pounds writing paper; 1,376,000 pounds map paper; 385,000 pounds manifold paper; 3,835,000 pounds bond paper; 1,255,000 pounds ledger paper; 680,000 pounds index paper; 130,000 pounds cover paper; 18,000 sheets cloth-lined paper; 40,000 pounds manila paper; 340,000 pounds kraft paper; 300,000 sheets gummed paper; 50,000 pounds blotting paper; 115,000 pounds tag board; 10,000 pounds manila cardboard; 10,000 sheets white litho-coated one side cardboard; 50,000 sheets railroad board; 200,000 pounds wood cardboard; 120,000 pounds tan board; 7,620,000 pounds postal and paper; 10,000 sheets pressboard; 200,000 pounds newsboard; 65,000 pounds binder's board; 220,000 pounds chestnut cover board.

In cases where more than 1,000 reams are called for, proposals wil lbe received for 1,000 reams or more.

ENVELOPES

The approximate estimated quantities set forth in detail in the schedule comprise:

19,450,000 Kraft; 9,150,000 Writing, Chemical Wood, white and colored; 190,000 100% Writing, White; 355,000 25% Bond, White; 405,000 100% Bond, White.

By direction of the Joint Committee on Printing.

JOHN J. DEVINY,
Public Printer.

WASHINGTON, D. C.,
May 21, 1951.
J-8

WANTED

WANTED—W & P Shredders, Evaporators, Generators and Boilers, Slitters, Cutters, Hydraulic presses, Sheridan Presses, Dryers. Address Box 51-89 care Paper Trade Journal. TF

WANTED—A used sheet mold and a Mullen Tester hand or motor driven. Address Box 51-249 care Paper Trade Journal. J-1

WANTED—Brightwood Box Machine, Shredders, Evaporators, Generators and Boilers, Slitters, Cutters, Hydraulic presses, Sheridan Presses, Dryers. Address Box 51-88 care Paper Trade Journal. TF

WANTED

WANTED

2—Morden Stock Makers in good condition and complete with filling. With or without 440 volt, 3 phase, 60 cycle motors.

Address Box 51-279 care Paper Trade Journal.

J-15

WANTED

WANTED

2—#400 FV 36" Bauer Double Revolving Disc Pulpers, complete, and in good condition for operation on 440 volt, 3 phase, 60 cycle current.

Address Box 51-280 care Paper Trade Journal.

J-15

WANTED

WANTED

Serviceable Grocery Bag Machine
8 through 20 lb. sizes.
Recent Model Potdevin preferred.

Address Box 50-450, care Paper Trade Journal. TF

WANTED—Used machine for making large sizes of open mouth, multi-wall, satchel bottom sacks. Prefer with printer. Give full information as to condition, size, range and other pertinent information. Address Box 51-272 care Paper Trade Journal. J-1

WILL EXCHANGE #6 Camachine 62° Shear Cut for a #6 Camachine Score Cut. Address Box 467, Camden, N. J. J-22

PROBLEM?

Waste Water Disposal?
Pulp and Water Recovery?
Stream Polution?
Water Filtration?
Water Softening?
Water Conditioning of Any Type?

We can help you—

Nearly 50 years experience building water purifying plants for the Paper Industry—

Send for particulars or a representative will call.

HUNGERFORD & TERRY, INC. CLAYTON, N. J.

H. WATERBURY & SONS CO.

ORISKANY, N. Y.

Manufacturers of

WATERBURY FELTS

Since 1860

BUY

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"EXCELSIOR" FELTS

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Morningstar, Nichol, Inc.
National Starch Products, Inc.
Nopco Chemical Co.
Plaskon Division, Libbey-Owens-Ford Glass Co.
Reichhold Chemicals, Inc.
Stein, Hall & Co., Inc.

AGITATORS
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Dilts Machine Works, Inc.
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D. J. Murray Mfg. Co.
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Valley Iron Works Co.
Shartle Brothers Machine Co.

ADJUSTABLE SHAKE MOTION
Manchester Machine Co.

ADJUSTABLE TILTING MOTOR BASE
Lovejoy Flexible Coupling Co.

ALLOYS
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ANTIFOAM
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Nopco Chemical Co.

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Dilts Machine Works
Potdevin Machine Co.

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F. L. Smidth & Co.

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Combustion Engineering-Superheater, Inc.
Hoffl Company, Inc.
Nichols Engrg. & Research Corp.

BARKERS AND CHIPPERS
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Appleton Machine Co.
Carthage Machine Co.
D. J. Murray Mfg. Co.
Valley Iron Works Co.

BARS
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E. D. Jones & Sons Co.
The Moore & White Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

BASIC WEIGHT SCALES
Thwing-Albert Instrument Co.

BEARINGS
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Black Clawson Company
E. D. Jones & Sons Co.
Magnus Metal Corp.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
SKF Industries
Stephens-Adamson Mfg. Co.
Timken Roller Bearing Co.
Valley Iron Works Co.

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The Appleton Machine Co.
Black Clawson Company
Dilts Machine Works
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Morden Machines Co.
J. J. Ross Company
Ross Paper Machy. Co.
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

BED PLATES
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Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Farrel-Birmingham Co., Inc.
E. D. Jones & Sons Co.
Lukenweld Div., Lukens Steel Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

BELTING
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Goodrich, B. F., Co.
The Goodyear Tire & Rubber Company
Link Belt Company

BIN DISCHARGERS
Hoffl Company, Inc.
Stephens-Adamson Mfg. Co.

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General Dyestuff Corp.
Rohm & Haas Co.
Virginia Smelting Co.

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Perkins & Sons, Inc., B. F.
Moore & White Co.
Niagara Alkali Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

BLOW PIPES & PITS
Carthage Machine Co.
Kalamazoo Tank & Silo Co.
Moore & White Co.
Murray Mfg. Co., D. J.
Walworth Company

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Babcock & Wilcox Co.
Combustion Engineering-Superheater, Inc.

BOTTOMS
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Valley Iron Works Co.

BOXBOARD SCALES
Thwing-Albert Instrument Co.

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Gus Riedel & Son

BRUSHES
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Gus Reidel & Son
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Smith Winchester Mfg. Co.
Weber, Herman G., & Co., Inc.

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Beloit Iron Works
Black Clawson Company
Downingtown Mfg. Co.
Farrel-Birmingham Co., Inc.
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Perkins & Sons, Inc., B. F.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

CARRIER ROPE
Williams-Gray Co.

CASEIN
American Cyanamid Co. Industrial Chem. Div.
Bunge Pulp & Paper Co.
Hercules Powder Co.

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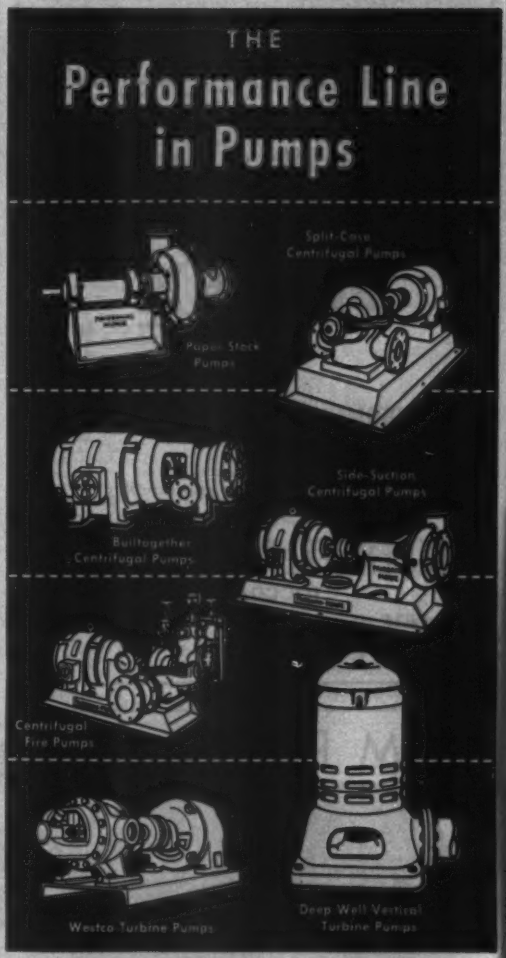
Black Clawson Company
Babcock & Wilcox Co.
Carthage Machine Co.
Dilts Machine Works
Downingtown Mfg. Co.
Farrel-Birmingham Co.
Hamblett Machine Co.
Lobdell United Co.
Magnus Metal Corp.
Michigan Steel Casting Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Walworth Company

CENTRIFUGAL MACHINERY
Bird Machine Co.
Nichols Engrg. & Research Corp.
Ross, J. O., Engrg. Co.
Shartle Brothers Machine Co

CHAINS
Stephens-Adamson Mfg. Co.

CHEMICAL COTTON PULP
Hercules Powder Co.



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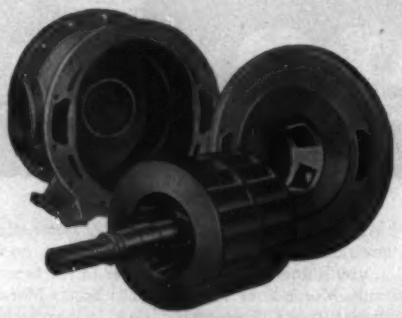

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Calgon, Inc.
Dow Chemical Company
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General Dyestuffs Corp.
Geigy Co., Inc.
B. F. Goodrich Chemical Co.
Gottesman & Co.
Hercules Powder Co.
Hooker Electrochemical Co.
The Kinsley Chemical Company
Monsanto Chemical Company
National Aluminate Corp.
Naugatuck Chemical Division of U. S. Rubber Co.
Niagara Alkali Company
Nopco Chemical Co.
Pittsburgh Plate Glass Co., Columbia Chemical Division
Reichhold Chemicals, Inc.
Rohm & Haas Co.
Virginia Smelting Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

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E. D. Jones & Sons Co.
Kalamazoo Tank & Silo Co.
Shartle Bros. Mch. Co.

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E. I. du Pont de Nemours & Co., Inc.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Pittsburgh Plate Glass Co
Wyandotte Chemicals Corp., J. B. Ford Division

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The Bagley & Sewall Company
Black Clawson Company
Farrel-Birmingham Co.
Moore & White Co.
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
Shartle Bros. Mch. Co.
Stephens-Adamson Mfg. Co.

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Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
The Mayer Machine Co., Inc.
Moore & White Co.
Potdevin Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corporation, John
Weber, Herman G., & Co., Inc.

COATING MATERIALS

American Cyanamid Company Industrial Chemicals Division
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The Goodyear Tire & Rubber Company
Hercules Powder Co.
J. M. Huber Corp.
Monsanto Chemical Company
Naugatuck Chemical Division of U. S. Rubber Co.
Nopco Chemical Co.
Plaskon Division, Libbey-Owens-Ford Glass Co.
Reichhold Chemicals, Inc.
Wyandotte Chemicals Corp., Michigan Alkali Div.

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COMPLETE FOURDRINIER ROLL GRINDING

Manchester Machine Co.

COMPRESSORS

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Nash Engineering Co.
Roots-Connersville Blower Corp.

CONDENSATE FILTERS

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The Permutit Company

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Bird Machine Company
DeZurik Shower Company
Paper & Industrial Appliances

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C. M. Guest & Sons

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Black Clawson Company
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Ebasco Services
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Alvin H. Johnson & Co., Inc.
Main, Inc., Chas. T.
The Rust Engrg. Co.
Shartle Bros. Mch. Co.
J. E. Sirrine & Co.
Frank C. Vaughan
John Waldron Corp.
H. G. Weber & Co., Inc.

CONTINUOUS DIGESTER

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CONTROLLERS

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The Brown Instrument Co.

CONTROLS

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Johnson Corp.
Poirier Control Co.
Shartle Bros. Mch. Co.
Stickle Steam Specialties Co.

CONVERTING MACHINERY

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Egan, Frank W., & Co.
John Waldron Corp.
Dilts Machine Works

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Murray, D. J., Mfg. Co.
Ross Engineering Corp., J. O.
Shartle Brothers Mch. Co.
Stephens-Adamson Mfg. Co.

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Smith & Winchester Mfg. Co.
Sonoco Products Co.

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COTTON LINTER

Alpha Cellulose Corp.
Railway Supply & Mfg. Co.

COTTON PULP

Alpha Cellulose Corp.

COUCH ROLLS

Beloit Iron Works

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Black Clawson Company
Farrel-Birmingham Co., Inc.
E. D. Jones & Sons Co.
Lovejoy Flexible Coupling Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works
Waldron Corp., John

CRANES

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Whiting Corp.

CURL TESTER

Thwing-Albert Instrument Co.

CUTTERS

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Beloit Iron Works
Black Clawson Company
Dilts Machine Works
Gibbs-Brower Company, Inc.
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Harris-Seybold Co.
Jagenberg-Werke Akt. Ges.
Moore & White Co.
Perkins & Son, Inc., B. F.
The Sandy Hill Iron & Brass Works
Taylor, Stiles & Co.
The Smith & Winchester Mfg. Co.

CYLINDER MOULDS

Manchester Machine Co

CYLINDERS

M. W. Jenkins Sons, Inc.

DAMPENERS

Perkins & Son, Inc., B. F
Valley Iron Works Co.

DECKLE WEBBING

Williams-Gray Co.

DEFIBRATORS

American Defibrator Co.

DE-INKING

Dilts Machine Works
General Dyestuff Corp.
Kinsley Chemical Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

DEINKING CHEMICALS
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General Dyestuff Corp.
Kinsley Chemical Co.
Nopco Chemical Co.

DE-MINERALIZING EQUIPMENT
Hungerford & Terry, Inc.
The Permutit Company

DEMULSIFIERS
Wyandotte Chemicals Corp., Michigan Alkali Div.

DENSOMETERS
Bunge Pulp & Paper Co.
W. & L. E. Gurley

DESIGN CONSTRUCTION
Ebasco Services

DETERGENTS
American Cyanamid Company Industrial Chemicals Division
Calgon, Inc.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

DEWAXING CHEMICALS
American Cyanamid Company Industrial Chemicals Division
General Dyestuff Corp.
Nopco Chemical Co.

DIFFERENTIAL SCALES
Thwing-Albert Instrument Co.

DIGESTERS
Babcock & Wilcox Co.
Blaw Knox Company
Chicago Bridge & Iron Co.
Combustion Engineering-Superheater, Inc.
Lakenwald
Paper & Industrial Appliances
Pusey & Jones Corp.

DISPERSING AGENTS
Calgon, Inc.
General Dyestuff Corp.
Monsanto Chemical Company
National Aluminate Corp.
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

DOCTORS
The Bagley & Sewall Company
Bird Machine Company
Black Clawson Company
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Lobdell United Co.
Lodding Engineering Corp.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

DOCTOR BLADES
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Bird Machine Company
Lodding Engrg. Corp.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

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Black Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Lukenweld
The Moore & White Co.
Murray Mfg. Co., D. J.
J. J. Moss Company
Red-Ray Mfg. Co., Inc.
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

DRILLED SUCTION COUCH ROLLS
Manchester Machine Co.

DRILLED SUCTION DRUM ROLLS
Manchester Machine Co.

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Allis-Chalmers Mfg. Co.
Appleton Machine Co.
The Bagley & Sewall Company
Beloit Iron Works
Bird Machine Co.
Black Clawson Company
Dilts Machine Works
Downingtown Mfg. Co.
Fairbanks, Morse & Co.
Farrel-Birmingham Co.
General Electric Company
Gibbs-Brower Company, Inc.
Moore & White Co.
Murray, D. J., Mfg. Co.
Pusey & Jones Corp.
J. J. Moss Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Bros. Mch. Co.
Stephens-Adamson Mfg. Co.
Valley Iron Works Co.
Westinghouse Electric Corp.

DRUM WINDERS
Manchester Machine Co.

DRYER DRAINAGE
Stickle Steam Specialties Co.

DRYER ROLL PYROMETER
Thwing-Albert Instrument Co.

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Downingtown Mfg. Co.
Frank W. Egan & Co.
M. W. Jenkins Sons, Inc.
E. D. Jones & Son Co.
Moore & White Co.
D. J. Murray Mfg. Co.
John Waldron Corp.

DUSTING BRUSHES
M. W. Jenkins Sons, Inc.

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Bunge Pulp & Paper Co.
Ciba Company
E. I. du Pont de Nemours & Co., Inc.
Geigy Co., The
General Dyestuffs Corp.
National Aniline Division, Allied Chemical & Dye Corp.

ELECTRIC HYGROMETER
Thwing-Albert Instrument Co.

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Egan, Frank W., & Co.
John Waldron Corp.

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EMULSIFIERS
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Wyandotte Chemicals Corp.

ENZYMES
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Vanderbilt Co., R. T.

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Swenson Evaporator Co., Div. of Whiting Corp.

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FANS
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Ross Engineering Co., J. O.

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Merrick Scale Mfg. Co.
The Permutit Company
Stephens-Adamson Mfg. Co.

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Shuler & Benningfield
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FELT CONDITIONERS
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The Sandy Hill Iron & Brass Works

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Moore & White Co.
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Shartle Brothers Machine Co.
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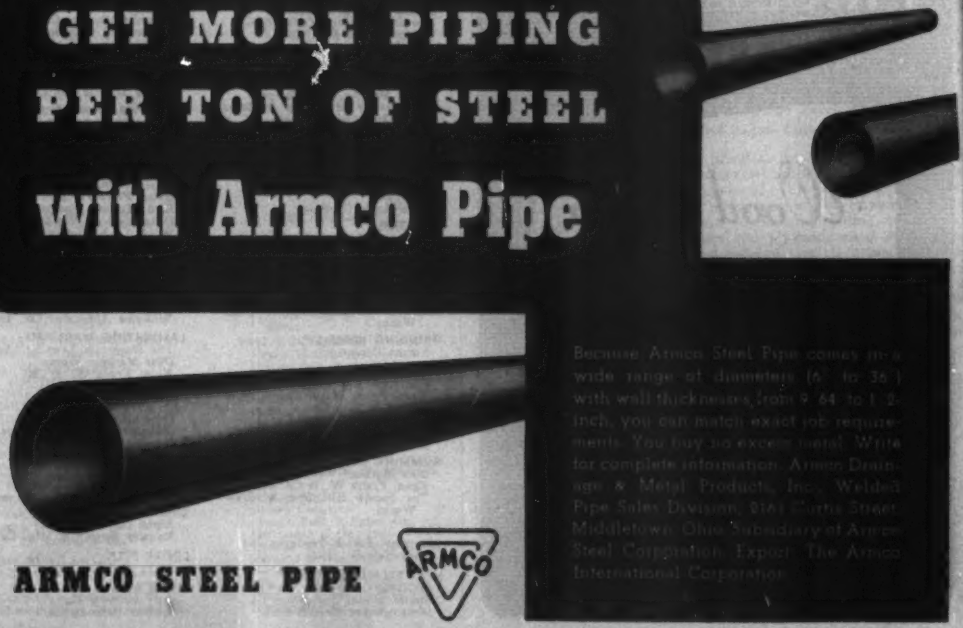

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Hungerford & Terry, Inc.
Johnson Corp.
Moore & White Co.
J. O. Ross Engrg. Corp.
The Sandy Hill Iron & Brass Works
Walworth Company

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Crane Company
Shartle Bros. Mch. Co.
Walworth Company

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Lovejoy Flexible Coupling Co.
John Waldron Corp.

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Norton Co.

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The Sandy Hill Iron & Brass Works

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Clark Equipment Company Industrial Truck Division
Elwell Parker Elec. Co.
Towmotor Corp.

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Williams Apparatus Co., Inc.

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Black Clawson Company
Downingtown Mfg. Co.
The Moore & White Co.
Noble & Wood Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

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GASKETS
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Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
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Western Gear Works

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Blaw-Knox Company

GRINDERS
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Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Lobdell United Co.
Norton Company
Samuel C. Rogers and Company
The Sandy Hill Iron & Brass Works

GRINDING WHEELS
Norton Company

GUIDES
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Egan, Frank W., & Co.
Gilbert & Nash Co.
The Moore & White Co.
Mount Hope Machinery Co.
John Waldron Corp.

GUMMING MACHINES
Dilts Machine Works
Egan, Frank W., & Co.
The Sandy Hill Iron & Brass Works

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National Starch Products, Inc.
Stein-Hall Co., Inc.

HEAT EXCHANGERS AND RECOVERY SYSTEMS
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Westinghouse Electric Corp.

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E. D. Jones & Sons Co.
General Electric Co.
D. J. Murray Mfg. Co.
Red-Ray Mfg. Co., Inc.
Ross Engineering Corp., J. O.
Stickle Steam Specialties Co.
Valley Iron Works Co.

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The Goodyear Tire & Rubber Company

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Aktivin Division, Heyden Chemical Corp.
Nopco Chemical Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

IMPREGNANTS
American Cyanamid Company Industrial Chemicals Division
B. F. Goodrich Chemical Co.

INDENTING MACHINES
Dilts Machine Works

INDUSTRIAL TRACTORS
Clark Equipment Company Industrial Truck Division
Towmotor Corp.

INKOMETER
Thwing-Albert Instrument Co.

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Cambridge Instrument Co.
General Electric Company
W. & L. E. Gurley
B. F. Perkins & Son
Photovolt Corp.
Taylor Instrument Cos.
Testing Machines, Inc.
Thwing-Albert Instrument Co.
Williams Apparatus Co.

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Beloit Iron Works
Johnson Corp.
Lovejoy Flexible Coupling Co.
Shartle Bros. Mch. Co.

JORDAN FILLINGS
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Baker Brothers Mfg. Co.
E. D. Jones & Sons Co.
Shartle Bros. Mch. Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

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Black Clawson Company
Dilts Machine Works, Inc.
Hamblet Machine Co.
Heppenstall Company
E. D. Jones & Sons Co.
The Moore & White Co.
Simons Worden White Co.
Taylor Stiles & Co.
Valley Iron Works Co.

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Canadian Newsprint Supply Co.

LABORATORY CORRUGATOR
Thwing-Albert Instrument Co.

LABORATORY EQUIPMENT
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Bauer Brothers Co.
Bird Machine Company
Dilts Machine Works
W. & L. E. Gurley
Egan, Frank W., & Co.
E. D. Jones & Sons Co.
Taylor Instrument Companies
Testing Machines, Inc.
Valley Iron Works Co.
John Waldron Corp.
Williams Apparatus Co., Inc.

LAMINATING MACHINES
The Bagley & Sewall Company
Dilts Machine Works
Egan, Frank W., & Co.
John Waldron Corp.

LAY BOYS
Dilts Machine Works
Gibbs-Brower Company, Inc.
Hamblet Machine Co.
Moore & White Co.

LIFT TRUCKS
Clark Equipment Company Industrial Truck Division

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Railway Supply & Mfg. Co.

LINTER PULP
Alpha Cellulose Corp.

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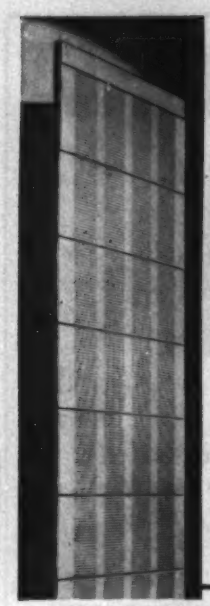

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Bulkley, Dunton Pulp Co. — —
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Draper Brothers Co. — —
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du Pont, E. I., de Nemours & Co. Dyestuffs Dept. — —
du Pont, E. I., de Nemours & Co. Grasselli Chem. Dept. — —
du Pont, E. I., de Nemours & Co. Polychemicals Dept. — —
Duriron Co., The — —

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Goodrich Chemical Co. — —
Goodyear Tire & Rubber Co. — —
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Jones, E. D., & Sons Co. — 35

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Kidder, Peabody & Co. — —
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Knox Woolen Co. — 40
Koppers Co., Inc. — —

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Murray, D. J., Mfg. Co. — —

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Reidel, Gus, & Son — —
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Restigouche Co., Ltd. — —
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Rogers, S. C., & Co. — —
Rohm & Haas Co. — —
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Sirrine, J. E., Co. — —
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Sonoco Products Co. — —
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Stickle Steam Specialties Co. — —
Stowe Woodward Inc. — —
Sun Oil Co. — —
Sutherland Refiner Corp. — —
Swenson Evaporator Co. — —

T

Taylor Instrument Co. — —
Taylor Stiles & Co. — —
Tennessee Coal, Iron & R. R. Co. — —
Testing Machines, Inc. — —
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Vanderbilt, R. T., Co. — —
Vaughan, Frank C. — —
Virginia Smelting Co. — —

W

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Walworth Co. — —
Waterbury Felt Co. — —
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Wellman Engineering Co. — —
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Wheeler Roll Co. — —
Whiting Corp. — —
Williams Apparatus Co. — —
Williams Gray Company — —
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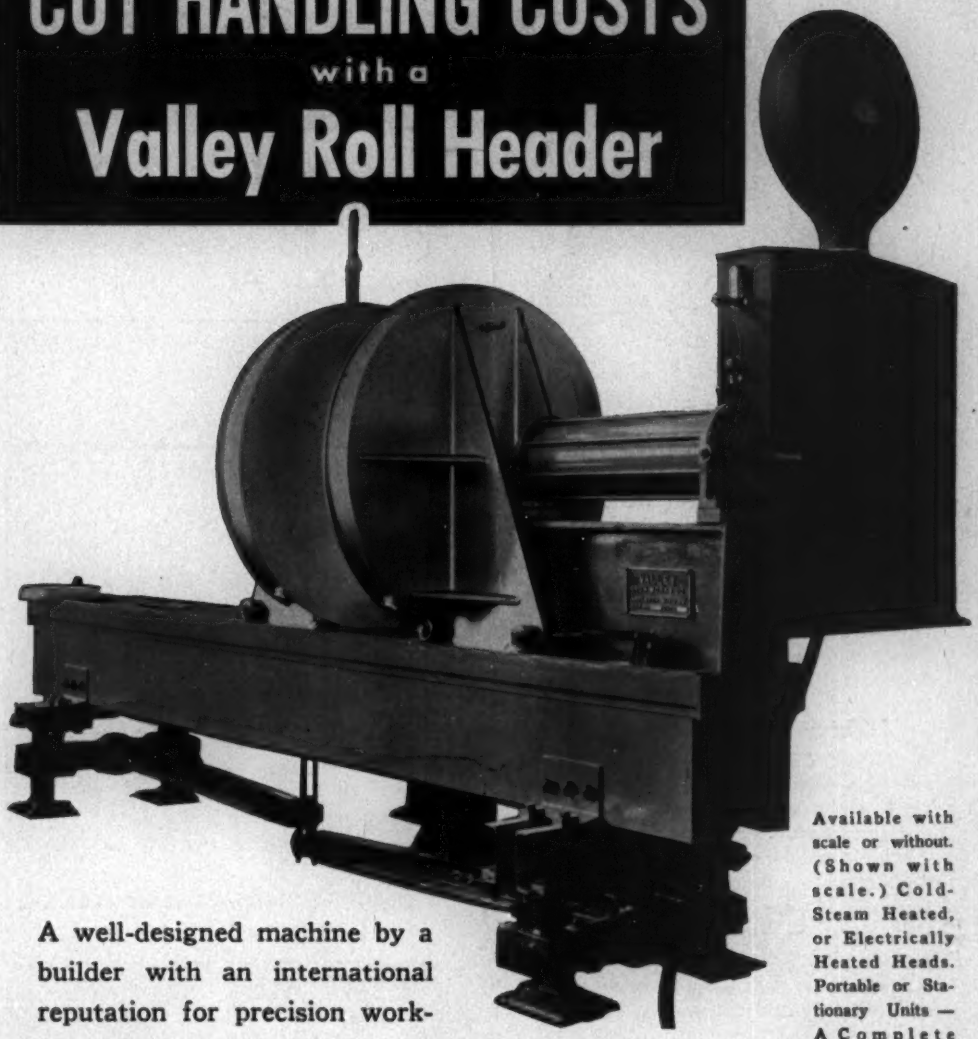

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